

Every engineering task, whether building a structure, constructing a plant or designing an automobile starts with choosing the right materials for the job. The **Department of Mining, Metallurgical, and Materials Engineering** begins at the very top of the line, where everything else in the engineering design process depends.

**Because it all begins with us.**



mining

metallurgy

materials

## MINING ENGINEERING

The extraction of valuable earth materials from the crust necessitates extensive technical expertise, considering various factors to ensure a mining operation that extracts high-grade minerals while maintaining a risk-free and environmentally friendly approach. The Department of Mining, Metallurgical, and Materials Engineering takes pride in shaping top-notch engineers who uphold the quality, safety, and social responsibility of mining operations. The BS Mining Engineering program initially emerged under the Department of Civil Engineering, attaining autonomy in 1934 and evolving into a five-year program in 1954 with the introduction of Metallurgical Engineering. The curriculum continues to emphasize the vital role of engineering in the mining industry. Noteworthy changes from 1984 to 2018, including mandated adjustments and course numbering standardization, have shaped the program.

## METALLURGICAL ENGINEERING

This discipline specializes in the purification, property modification, and forming of metals, providing graduates with a profound understanding of chemical and physical systems related to both precious and industrial metals. The Bachelor of Science in Metallurgical Engineering program, introduced in the academic year 1956-57 at the University of the Philippines (UP), has undergone rigorous evaluations by the Commission on Higher Education (CHED). Awarded Center of Excellence status for 1999-2004 and later from April 1, 2016, to December 31, 2018. In response to the K-12 transition, the BS MetE curriculum underwent strategic revision, incorporating technical and General Education courses. Consultations with an advisory council and benchmarking with other universities guided this process, leading to the transition to a 4-year curriculum in the academic year 2018-2019, aligning the program with current research trends and instructional techniques while maintaining its commitment to excellence.

## MATERIALS ENGINEERING

This field provides essential tools for the improvement of metals, polymers, ceramics, and smart materials across various applications, fostering technological progress. The inception of the Bachelor of Science in Materials Engineering program at the University of the Philippines, Diliman, in 1999 marked a pioneering effort at the undergraduate level in the country. Approved by the Board of Regents on May 29, 1999, the program underwent its first curriculum revision in 2012, incorporating the university's hybrid General Engineering program and ensuring alignment with emerging technologies and global issues. CHED officially recognized the program in 2017, and further curriculum changes in 2018 responded to the implementation of the K-12 Curriculum. The UP DMMME also extends its academic reach through allied graduate programs in M.S. and Ph.D. Materials Science and Engineering, established in June 1992 in collaboration with the College of Science.



## CONTACT US

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UNIVERSITY OF THE PHILIPPINES DILIMAN

# DEPARTMENT OF MINING, METALLURGICAL AND MATERIALS ENGINEERING



**extract.**



**transform.**

**innovate.**

## COURSES OFFERED

### UNDERGRADUATE PROGRAMS

#### BS Mining Engineering

100% Passing in Board Exam for 9 straight years

#### BS Metallurgical Engineering

Consistently the top-performing school in PRC Board Exam

#### BS Materials Engineering

The first and most comprehensive degree program of its kind in the Philippines

### GRADUATE PROGRAMS

#### MS Metallurgical Engineering

The only graduate degree in metallurgical engineering in the country. The MS Metallurgical Engineering program has two tracks: Extractive Metallurgy and Physical Metallurgy

#### MS Materials Science and Engineering

Jointly offered with the College of Science, University of the Philippines Diliman

#### PhD Materials Science and Engineering

Jointly offered with the College of Science, University of the Philippines Diliman, and the only doctorate degree in the field of Materials Science and Engineering in the Philippines



## FACULTY AND STAFF PROFILE

### 46 FACULTY MEMBERS

2 Professor Emeritus, 4 Professors, 7 Associate Professor, 16 Assistant Professors, 5 Instructors, 3 Professorial Lecturer, 7 Senior Lecturers, 2 Lecturer

### 19 ADMINISTRATIVE & RESEARCH STAFF

6 Research, Extension and Professional Staff, 4 Administrative Staff, 9 Technicians

## VISION

A leading academic and research institution on mining, metallurgical, and materials engineering that employs multidisciplinary holistic approach for national and global progress.

## MISSION

To provide top-quality **EDUCATION** in mining, metallurgical, and materials engineering using advanced facilities through high-caliber and internationally recognized faculty members;

To foster **INGENUITY** and **PRODUCTIVITY** on sustainable and clean mineral and metal extraction technologies; synthesis, processing, and characterization of smart and functional materials and materials for energy from indigenous resources;

To render socially-relevant and exceptional **PROFESSIONAL SERVICES** in mining, metallurgical, and materials engineering through dynamic and competent faculty members and staff.

## WHY MMME?

### Because everything begins with us.

Our graduates are in demand in a wide range of industries essential to nation-building. Expertly trained mining, metallurgical, and materials engineers command a high price in the current job market.

Employment opportunities include, but are not limited to:

#### Mining Engineering

Explosives Engineer  
Operations Engineer  
Mine Safety Engineer

#### Metallurgical Engineering

Process Engineer  
Corrosion Engineer  
Mill and Plant Manager

#### Materials Engineering

Failure Analyst  
Product Development Engineer  
Microelectronics Packaging Engineer

## RESEARCH THRUSTS

### Responsible Extraction Technologies of Materials

Mineral or ore characterization, Mineral and metal extraction, Tailings/waste utilization, rehabilitation/remediation, and reprocessing; social and economic impact of mining and extraction activities, health and safety, and materials recovery

### Enabling Technologies

Plasma-assisted processes, nanomaterials synthesis and micro-nano structure fabrication, ionic liquids and deep eutectic solvents, computer-based (calculations, modeling, simulation, and artificial intelligence-facilitated) studies, and novel measurement techniques

### Materials for Energy

Materials for energy generation and harvesting, materials for energy conversion, materials for energy transport and storage, advanced materials for sustainable and renewable energy applications

### Ecomaterials

Biobased packaging materials and bioplastics (derived from organic sources), materials valorization, recyclable materials, naturally-occurring materials, green technologies, materials free from hazardous substances, materials manufactured with low energy consumption and in clean conditions, materials that purify contaminated water and air

### Biomaterials

Materials for prostheses and implants (e.g. transtibial prosthesis, external fixators, 3D printed articular cartilage, SMA materials for stent application, dental biomaterials); materials for medical treatment (e.g. wound dressing and healing, antibacterial gels, drug delivery systems, abdominal wall defect closure, Rebirth); materials for diagnosis (e.g. medical sensors, phantom models for ultrasound); materials for protective devices (e.g. facemasks, medical cleaning/disinfection devices)

## SCHOLARSHIPS

Several private companies and government agencies offer scholarships for DMMME students. Study with us and avail of numerous tuition discounts and allowances!

**Filminera Resources Corp.**

**Phil. Gold Processing & Refining Corp.**

**Philsaga Mining Corp**

**Department of Science and Technology Engineering Research and Development for Technology**

**...and more!**