

MATERIALS SCIENCE AND ENGINEERING (3 YEARS)

OBJECTIVES

This program aims to cultivate engineering talents who can effectively grasp the physical and chemical theories related to material preparation and processing, properties control, characterization, and analysis. Students will develop a deep understanding of the relationship between material composition, structure, and performance. They will also acquire the ability to integrate theoretical knowledge with practical application and independently conduct research in material design and innovation.

PROGRAM SPECIALITY

- ① National key discipline in SCUT
- ② According to ESI Global Rankings, Materials Science ranked in the top 0.1 % (0.122 %) in 2024
- ③ First-class research environment, projects supported by 7 national and 27 provincial-level research platforms
- ④ Strong links with industry, joint training projects with multinational enterprise.

CURRICULUM

| | Course Title | Course Credit | Hours |
|-------------------|--|---------------|-------|
| Compulsory Course | Chinese Language 1 | 4 | 64 |
| | Chinese Listening 1 | 4 | 64 |
| | Chinese Language 2 | 4 | 64 |
| | Chinese Listening 2 | 4 | 64 |
| | Solid State Theory | 3 | 48 |
| | Methods for Materials Characterization | 3 | 48 |
| Elective Courses | Introduction to bio-MEMS, microfluidics and biomedical devices | 2 | 32 |
| | Biomechanics | 2 | 32 |
| | Advanced Polymer Chemistry | 2 | 32 |
| | Advanced Polymer Physics | 2 | 32 |
| | Nanomaterials and Nanotechnologies | 2 | 32 |
| | Materials Simulation and Computation | 2 | 32 |
| | Metallic Functional Materials | 2 | 32 |
| | Concrete, Microstructure Properties and Materials | 2 | 32 |
| | Frontiers of Organic Optoelectronic Materials | 2 | 32 |
| | Fundamentals and Applications of Electrochemistry | 2 | 32 |
| | Advanced Porous Materials and Their Applications | 2 | 32 |
| | Luminescent Materials and Applications | 2 | 32 |
| | Sensors: Mechanism and Application | 2 | 32 |
| | Elastomer Materials Science and Engineering | 2 | 32 |
| | Structure and Properties of Polymer Materials | 2 | 32 |
| | Chinese Culture | 2 | 32 |

The above course schedule is for reference only, the specific courses are subject to the year of 2025 training scheme.