

Doctoral Program in Materials Science and Engineering

1. Introduction

Materials Science is a subject field researching on the relationship among the formation, structure, processing, property and performance of materials. It is committed to the performance optimization, processing optimization, and development & application of materials.

2. Research Directions

- (1) New metal and advanced composite materials
- (2) Nano-materials and technology
- (3) Advanced functional materials
- (4) New energy materials
- (5) Biomaterials,
- (6) Inorganic Non-metallic Materials
- (7) surface engineering
- (8) Advanced materials processing technology
- (9) Bonding engineering

3. Duration of studies

Full time PhD students are expected to complete their studies and earn their degrees in 4 to 8 years, and they will be disqualified from the program after 8 years.

4. Credits requirements

Students are required to complete at least 18 degree credits from courses in Section 5 with a minimum of 16 coursework credits and 2 obligatory courses.

5. Curriculum Provision

Course No.	Course Name	Semester	Credits
<i>I. Fundamental Courses</i>			4
L371A002	Chinese	Fall	2
L371A003	Introduction to Chinese Classics	Fall	2
<i>II. Core Courses</i>			8+
L113A015	Elastic Mechanics	Spring	3
S116B001	Characterization Techniques for Materials	Spring	2
S116B002	Materials Physics	Fall	3
S116B003	Phase Transformation and Kinetics in Materials	Fall	3
S116B004	Physical Foundation for Crystal Growth	Fall	3
<i>III. Major Electives</i>			4+
L116C006	Materials Processing Technology	Spring	2
L116C009	Photoelectric Functional Materials Experiment	Spring	2
L116C011	Tissue Engineering	Spring	2
L116C007	Modern Bonding Engineering	Spring	2
S116C001	Composite Materials	Fall	2

L116C005	Materials for Renewable Energy and Sustainable Environment	Spring	2
L116C010	Strength and Fracture Theory	Spring	2
IV. Thesis Credits			
L0000003	Dissertation Proposal II	Fall	2
L0000004	Academic Activities II	Spring	
Total Credits Required			18+
NOTE: Graduate students are usually expected to meet the course requirements in the first academic year, including: I. Fundamental Courses, II. Core Courses, and sufficient elective courses in III. Major Electives.			

6. PhD Dissertation Topic and Research Proposal

PhD dissertation proposal should be no less than 10000 words long and has at least 80 references, half of which must be published in the recent 5 years. A PhD student should choose a research topic for the PhD dissertation and spend no less than 2 years on the dissertation research and writing, all under an advisor's guidance.

Detailed regulations and requirements on PhD dissertation are documented in the "*NJUST Regulations about the Topic Selection, Research Proposal and Composition of Postgraduate Theses and Dissertations*". The PhD dissertation research proposal writing and defense should be completed in no later than the second academic year of the program.

7. Publication

To meet the degree requirements, a PhD student is required to have a certain number of academic publications related to the dissertation research. Detailed requirements are documented in "*NUST regulations on a postgraduate's publications of their research work*".

8. PhD Dissertation Requirements

Detailed regulations and requirements on PhD dissertation are documented in the "*NJUST Regulations about the Topic Selection, Research Proposal and Composition of Postgraduate Theses and Dissertations*", and "*NUST Style Sheet for Theses and Dissertations*". For a joint effort with others, or a follow-up of previous work, the student should clearly specify his/her contribution to the thesis.