

Education Plan for Doctor in Materials Science and Engineering

(Discipline Code:0805,Award Doctor Degree of Engineering)

(The program is suitable for graduate students to pursue doctoral degree.)

I Objectives

The major is to train senior specialized talent skilled in a variety of research, teaching and engineering technology and management engineering in material science and engineering, and be innovative in all those fields. The program would require the postgraduate students to be able to:

To study hard and master Marxism Leninism, Mao Zedong thought and Deng Xiaoping's theory of building socialism with Chinese characteristics. Adhere to the basic line of the party, Love the motherland, observe law and discipline, have good occupation morals. The spirit of unity and cooperation, and the scientific quality of truth, to actively serve the socialist modernization construction

Be skilled in the basic theory、 basic experiment skill and systematic professional knowledge of one's own field, know the dynamics of cutting-edge professional disciplines. Master two foreign languages, can skillfully read professional foreign language materials, use a foreign language to write papers and have good English listening and speaking ability and international academic exchange ability. Have the ability to undertake independent scientific research, can make innovative achievements in the discipline or specific technology.

Actively participate in physical exercise and social activities, with good quality and the mental health.

II Disciplinary Research Areas

Ecological building materials	Novel functional materials and devices
Advanced composite materials	Environmental materials
New energy materials and devices	Biomedical materials

III Educational System and Years of Study

The educational System for a Ph.D.. candidate with a master's degree is three years and the study period lasts generally three to four years, no more than six years. Credit system is implemented. Credits for Ph.D.. candidate should be more than or equal to 16 credits, among which at least 12 credits are from courses. Public degree courses credits should be greater than or equal to 6 credits; Professional Degree Course credits should be greater than or equal to 4 credits, Elective credits should be greater than or equal to 2 credits; Compulsory courses credits are 4.

IV Curriculum System and Credit Requirements

Course Category	Course No.	Course Name	Hour	Credit	Semester	School	Remark
Public Course	003281001	First Foreign Language(Chinese)	108	6	12	School of Internation Education	
	003281002	Introduction to China	54	3	1	School of Internation Education	
Specialized Course	00111001	Frontiers in Materials Science and Technology	36	2	1		
	00111002	Eco-System Building Materials	36	2	2		
	00111003	Polymer Materials Physics and Chemistry	36	2	2		
	00111004	Advanced Composite Materials	36	2	2		
	00111005	Biomaterials	36	2	2		
	00111006	Advanced Processing Technology of Materials	36	2	2		
	00111007	Principles of Material Design	36	2	2		
	00111008	Functional Materials	36	2	2		
	00111009	Progress of New Energy Materials	36	2	2		
	00111010	The Mathematical and	36	2	2		

Course Category	Course No.	Course Name	Hour	Credit	Semester	School	Remark
		Physical Method for Materials Processing Simulation					
	00111011	Intelligent Materials and Structure	36	2	2		
Optional Course	00112001	Advanced Cementitious Materials Science	36	2	2		
	00112002	Introduction to Advanced Ceramics	36	2	2		
	00112003	Progress in Glass and Non-crystalline Materials	36	2	2		
	00112004	Synthesis and Preparation of Polymer Materials	36	2	2		
	00112005	Design of Polymer Structure and Property	36	2	2		
	00112006	Analysis of Polymeric Materials	36	2	2		
	00112007	Advanced Composite Mechanics	36	2	2		
	00112008	Interface and Design of Composites	36	2	2		
	00112009	Functional Composites	36	2	2		
	00112010	Biomedical Engineering Science	36	2	2		
	00112012	Advanced Bioinorganic Chemistry	36	2	2		

Course Category	Course No.	Course Name	Hour	Credit	Semester	School	Remark
	00112013	New Material in Molding Tool and Advanced Technique of Molding Tool Making	36	2	2		
	00112014	Intelligent Technology for Materials Processing	36	2	2		
	00112015	CAE/CAD/CAM Material Processing CAE/CAD/CAM	36	2	2		
	00112016	Structures and Properties of Materials	36	2	2		
	00112017	Microelectronics	36	2	2		
	00112018	Semiconductor Device Technology	36	2	2		
	00112019	Advanced Electrochemistry	36	2	2		
	00112020	Thin Film Material and its Preparation Technology	36	2	2		
	00112021	Nanostructured Materials Science and Technology	36	2	2		
	00112022	Solid State Physics	36	2	2		
	00112023	Advanced Cement-Based Materials	36	2	2		
	00112024	Writing of Research Paper	18	1	2		
	00114001	材料学院博士研究生实践环节	2				

Course Category	Course No.	Course Name	Hour	Credit	Semester	School	Remark
	00114002	材料学院博士研究生选题报告及中期考核	1		2		
Comput- S01V	00114003	材料学院博士研究生学术活动		1			

Notes:1. Optionally 1-2 elective course credits within the university.

2. If the candidate did not attend any second foreign language class during graduate study, he must elect a second foreign language at the doctoral phase.

V Compulsory Courses

Two credits for internship or practice. Candidates are required to stimulate a provincial (city) level and a natural (social) science fund project application and 30 minutes' presentation. After inspected and reviewed by the supervisor (Group), those who passed will get two credits.

One credit for academic activities. In order to encourage candidates to take concern and understand the state of art at home and abroad, broaden their horizons and inspire their creativity, each candidate should make public academic report at least five times, attend academic reports at least 10 times, and write 500 words or more each time after participating in academic activities. After examination by the supervisor (Group), those who complete it will get 1 credit of compulsory courses.

One credit for thesis proposal and interim assessment. Under the guidance of supervisors, candidates should pinpoint their research areas, look up relevant literature at home and abroad, conduct extensive investigations and make report on the selection of dissertation. Open dissertation defense time, place and committee members, conduct topic report defense. After examination, the research topic will be definite. After passing thesis proposal defense, the candidate will get one credit.

The college accept two times of doctoral thesis topic application every year (late March and late October). If the proposal is not approved, thesis work is not qualified. And the second thesis topic defense must be conducted. Ph.D. candidates must participate in the medium-term assessment. Specific requirements for the report on topics selection of the dissertation and interim assessment shall be carried out in accordance with the relevant provisions in graduate students' manual.

VI Scientific Research and Dissertation

After the thesis topic selection, Ph.D.. candidates should periodical summaries and stage work reports shall be written.

Ph.D.. candidate must submit the thesis proposal at least 12 mouths before apply for the thesis defense.

Ph.D. candidates apply for degree must achieve the requirements of the chapter IV, article 12

from the publication in the graduates' manual "Graduate students publish academic papers in order to apply for degree in WHUT".

Candidates applying for the degree must meet the relevant requirements of publication in the graduates' manual. Doctoral dissertation must pass the test by TMLC2 and reach the requirements of the Academic Degree Evaluation Committee for dissertation before the defense.

VII Cultivation Mode and Method

Tutor or tutor-based instruction group is the mode of cultivation.

Supervisor should according to the requirements of the training program and the principle of individualized to work out the students training plan, meanwhile they should consider every graduate student's specific situation. Strengthen graduate student scientific research ability, self-learning ability, practice ability, expression ability and the writing ability training and cultivation.

VIII Others

1. To examine the effects of instruction, ensure the quality, the items listed in the program must have an assessment. Assessment methods and performance assessment methods need to be clearly stated in the course syllabus.

2. Ph.D.. candidates who were enrolled ahead of schedule shall be trained as students starting from graduates under the program.

3. Before thesis proposal, Ph.D.. candidates are required to pass all the degree courses and get the credits before thesis proposal. Students are allowed to take some of the other elective courses according to the dissertation after thesis proposal. All the courses shall be completed before the application of dissertation defense.

4. Each discipline shall make specific regulations and requirements in the amount of literature to be read for the students during the study period. Science and Engineering candidates should review more than 80 pieces of literature at home and abroad (100 for candidates of other disciplines), in which foreign literature shall be no less than one third.

5. Ph.D.. candidates shall report their own learning and research work to the supervisor at least once a month at the course learning stage, and at least twice a month during the paper sessions, which shall be institutionalized and clearly clarified in the programs.

6. This program will enact from 2016.