Education Plan for Doctor in Mechanical Engineering

（Discipline Code:0802,Award Doctor Degree of Engineering）

I Objectives

1. Grasp the theories of Marxism and establish a scientific world outlook, adhere to the basic lines of the Party, love the motherland, abide the law, form a good character, behave honestly and trustworthy, strictly and cooperatively, and maintain good research ethics and professionalism.

2. Master broad and solid basic theories and systematically in-depth specialized knowledge of the discipline, be qualified in higher levels of teaching, researching, engineering technology and technological management and can make innovative achievements in the discipline or specific technology.

3. 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.

4. Maintain a good physical and mental health quality.

II Disciplinary Research Areas

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. The educational system for who starts directly from undergraduate is five years and the study period is generally five to six years, a maximum of seven years.

IV Curriculum System and Credit Requirements

The courses for doctoral curriculum courses shall include degree courses and non-degree courses. And the degree courses includes public degree courses and professional degree courses.

Curriculum system and distribution of credits are as follows:

Credits for Ph.D.. candidates with a master’s degree should be greater than or equal to 16 credits, while the candidates who start directly from undergraduates should be greater than or equal to 44 credits.

Discipline	Total credits	Candidates with master's degree ≥4 degree courses credits; candidates starting directly from undergraduate ≥30 degree course credits				Elective courses	Compulsory courses
		Public courses			Professional degree courses		
		Ideological and Political Courses	Foreign language	Mathematics			
Candidates with master degree	≥16	2	4	/	≥4	≥2	4
Candidates who start directly from undergraduate	≥44	2	6	4	≥18	≥10	4

1. The supervisor should make an individual cultivating program for the PhD candidates, which should have a clear requirements and make specific arrangements for course learning, literature reading, scientific research and dissertation based on the PhD candidate's personality trait during the first month of entrance.

2. PhD courses are divided into degree courses and non-degree courses. Degree courses includes public degree courses and professional degree courses.

a. Six credits for two public degree courses especially four credits, seventy-two class hours for the first foreign language and two credits , thirty-six class hours for the Chinese Marxism and the Contemporary.

Four to six credits for two professional degree courses.

b. Non-degree courses: the doctoral tutor leads the PhD candidates to take courses including the interdisciplinary professional courses. The PhD candidates don't need to take the second foreign language during the doctoral studies if the candidates have taken this one. Otherwise, the second foreign language must be the Compulsory courses.

3. The interdisciplinary PhD candidates must take two main courses relevant to the master in this discipline. The PhD candidates who have the same-level education background must take three main courses relevant to the master in this discipline. No credits for the courses.

V Compulsory Courses

1. Two credits for the 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.

The on-the-job PhD candidates can exempt the internship or practice, however, no credits for the courses, and the credits lacked must be paid them off with elective courses.

2. 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 (the amount of literature at least 100, the foreign literature should not less than one third of the literatures), conduct extensive investigations and make selection of dissertation. During the first 1 to 1.5 years of entrance the PhD candidates must make the report on selection of dissertation, the supervisor should make the list of panels consists of professors or the peer experts with equivalent tile After examination, the research topic will be definite. After passing thesis proposal defense, the candidate will get one credit.

3. 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.

In the middle of the thesis, the doctoral students must attend the mid-term examination of the school. Doctoral students should do the interim report of the progress of work in specialized academic conferences and by experts (defined ibid.) review the progress and achievements in the level. Doctoral student selection report and the specific requirements of the mid-term examination, according to the graduate Handbook, the implementation of the interim assessment and selection management approach.

VI Scientific Research and Dissertation

1 scientific research papers published and regulations (in accordance with the provisions of the school study word [2014]29 document)

(1) before applying for the thesis defense, the academic papers published by the doctoral graduate students must meet the following requirements:

A. at least 2 high level academic papers published in the international academic journals of the subject or related disciplines;

B. in the subject or relevant international academic journals: 1 SCI included high level academic papers and 2 high level academic papers published in the discipline or related disciplines EI included journals, Chinese class B and above academic journals and international top academic conference papers set;

C. published in the international academic journals of the discipline or related disciplines, 1 SCI high level academic papers included, and access to domestic or foreign authorized invention patents 1.

(2) encourage doctoral students: high level academic papers, doctoral student in my first author on the subject or related disciplines of important international academic journals published articles and dissertations related to high level academic papers, as the post academic requirements to apply for degree.

(3) ahead of pursuing a, apply for examination and verification of the admitted directly, the doctoral school Excellence Scholarship funded, school excellent doctoral dissertation cultivation fund, studying, national or public schools sent to study abroad for 6 months and above all doctoral students, for the degree of the answer before the debate must be at least: 1 SCI papers of academic journals. If at the same time enjoy a variety of the above policy, published a number of papers to enjoy the policy of species accumulating.

(4) Ph.D.. students apply to reply, if there is a formal employ the published academic papers but no publication, must satisfy: student obtain at least 4 years, and only 1 academic papers has been published but accepted (other academic papers were published), allowing it to in a debate program for the graduation reply until the within 2 years after graduation and submitted audit academic papers are published and meet the corresponding standards, then I apply for consideration of the degree.

The academic paper that has been employed shall have the official employment letter of the editorial department and the original papers submitted by the academic committee of the academic committee.

(5) the signature requirements for doctoral students, I first signed, or instructor signed first, I signed the second. The first patent inventor is to graduate I first signed, or instructor signed first, I signed the second; the first signed unit or the applicant for a patent to Wuhan University of science and technology.

(6) Doctoral Students for defense, if submitted to the review of the academic papers still unpublished (or invention patent application publication), allowing the organization degree thesis defense, thesis defense, the institute where the academic degree committee of consideration may be first allowed to graduate, but temporarily not to consider the degree, to be the within two years after graduating from submitted audit academic papers are published (or invented patents granted), I proposed to consider applications for the degree.

2 degree thesis

(1) the specific requirements of doctoral dissertation

A. doctoral thesis should adhere to the principle of theory with practice, should be systematic, complete academic papers, in science or specialized technology should make innovative achievements.

B. This is done by myself to that author has engaged in scientific research or undertaking independently the ability of technical work, from the literature review, research report, determine the reasonable research plan, experimental procedure and data processing, indicates that the analytical and problem solving ability.

Fluent and clear, accurate and correct, the unit of measurement chart paper printing and binding requirements c..

(2) thesis review and reply

A. PhD application before the respondent, by the instructor to evacuation college graduate work office "degree academic misconduct detection system (TMLC2) detection, detection by the into the dissertation evaluation program.

B. all doctoral candidates to apply for a doctoral degree, are required to carry out a doctoral degree thesis pre defense system, specific opinions in advance of the implementation of the measures for the implementation of the "doctoral dissertation".

C. intends to apply for a doctoral degree in health, such as:

In the International Academic Journal of the subject (SCI influencing factor 0.4 and above), at least 1 papers have been published.

The provincial and ministerial level and above scientific and technological awards or

3 writing dissertations by the school confidential management department formally approved and dense belongs to the secret level and above can apply for from blind trial and other proposed for the degree of Ph.D.. thesis shall be in blind trial, blind trial results according to the school on the

doctoral dissertation blind trial did not pass the meaning see ".

Note: College of mechanical and electrical engineering is only implemented.

D. PhD thesis review and rejoin the concrete according to the Wuhan University of Technology Doctoral Dissertation Defense provisions of execution; the doctoral dissertation defense must be publicity, according to the specific "doctoral dissertation defense publicity system implementation method,".

E. doctoral thesis submitted to institute filed before, shall be in accordance with the marking (proposed) expert Defense Committee and other experts in the doctoral thesis evaluation and defenses of the comments or suggestions, dissertation for master degree is for modification and specific ideas in the doctoral dissertation repair commitment to change management stipulates that "the implementation.

(3) on the day of the examination and verification of the report of the self selected title, the research work shall not be less than one year between the date of the application for the reply of the thesis.

(4) in the work of the thesis, the doctoral students are required to adhere to the scientific attitude of seeking truth from facts, and to work hard at practical and rigorous work.

VII Cultivation Mode and Method

VII training methods and methods

Doctoral students' training to take the tutorial responsibility system and the guidance method based on the tutor. The political thought work and the life by the graduate student Department unified management.

All training programs for the study of the project must be carried out for the assessment of doctoral students. Assessment methods, performance assessment, according to the provisions of the school.

Doctoral students should have the scientific attitude of seeking truth from facts, practical and rigorous work style, modest and sincere cooperation spirit and good scientific ethics.

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.

Mechanical Engineering（Ⅰ）

I Objectives

1. The condition monitoring and fault diagnosis of mechanical system.
2. The digital manufacturing technology and CNC equipment.
3. The theory and application of modern design.
4. The modern integrated manufacturing system and information system.
5. The theory and application of magnetic levitation.
6. The theory and application of tribology and material manufacturing.

II Disciplinary Research Areas

Course category	Course No.	Course name	Theory Hrs	experimental Hrs	Credit	Semester	School	Remark
Degree courses	003281001	First Foreign Language(Chinese)	108		6	12	School of Internation Education	compulsory
	003281002	Introduction to China	54		3	1	School of Internation Education	
	00411001	Digital manufacturing technology	54		3	1	School of Mechanical and Electronical Engineering	2 Two courses should be taken arbitrarily
	00411002	Advanced manufacturing engineering	38	16	3	1		
	00411003	Modern integrated Manufacturing	54		3	1		
	00411004	Industrial equipment and its control technology	54		3	1		

Course category	Course No.	Course name	Theory Hrs	experimental Hrs	Credit	Semester	School	Remark
	00411005	The modern design methodology and application of mechanical engineering	54		3	1		
	00411006	The condition monitoring and fault diagnosis of mechanized equipment	54		3	1		
	00411007	The base of magnetic levitation technology	54		3	1		
	00411008	The physical basis of surface and interface	54		3	1		
Elective Courses	01813001-004	Second Foreign Language (English, J French, Japanese, German, Russian) (elective)	72		4	2	School of Foreign Languages	compulsory
	02112101	The Marxism classics (selected readings)	18		1	2	School of Marxism	
	00412001	The robotics	36		2	2	School of Mechanical and Electronical Engineering	
	00412002	The electrical-mechanical coupled dynamics	36		2	2		
	00412003	The digital technology of non-metallic material manufacturing	36		2	2		
	00412004	The virtual reality simulation	36		2	2		
	00412005	The performance analysis and modeling of manufacturing system	36		2	2		

Course category	Course No.	Course name	Theory Hrs	experimental Hrs	Credit	Semester	School	Remark
	00412006	The vehicles ECU and its integrated control technology	36		2	2		
	00412007	The Remote monitoring and fault diagnosis	36		2	2		
	00412008	The base of reverse engineering	22	14	2	2		
	00412009	The manufacturing informatics	36		2	2		
Compulsory courses	00414001	The internship or practice			2	3	School of Mechanical and Electronical Engineering	
	00414002	The thesis proposal			1	3		
	00414003	The academic activities	510 Make public academic report at least five times; Attend academic reports at least 10 times			3		

Mechanical Engineering（Ⅱ）

I Objectives

1. Modern Design Theory and Method
2. Structural vibration and control
3. Mechanical vibration, diagnosis and control
4. Science of mechanical control system
5. Distributed sensing and cooperative technology
6. Robotics and control technology
7. Logistics system science and Engineering
8. Internet of things and logistics information technology
9. Logistics equipment and system optimization
10. Logistics system monitoring and control

II Disciplinary Research Areas

Course category	Course No.	Course name	Hour	Credit	Semester	School	Remark
Public Courses (starting from bachelor degree 12, starting from master degree 6)	003281001	First Foreign Language(Chinese)	108	6	12	School of Internation Education	starting from master degree
	003281001	First Foreign Language(Chinese)	108	6	12	School of Internation Education	starting from bachelor degree
	003281002	Introduction to China	54	3	1	School of Internation Education	compulsory course
	01421061	Mathematical physics equation	36	2	1	Polytechnic Institute	starting from bachelor degree 4 credits
	01421062	The theory of matrix	36	2	1	Polytechnic Institute	

Course category	Course No.	Course name	Hour	Credit	Semester	School	Remark
	01421063	The application of mathematical statistics	36	2	1	Polytechnic Institute	(choose any 2 courses)
	01421064	Random process	36	2	2	Polytechnic Institute	
	01421065	Numerical calculation	36	2	2	Polytechnic Institute	
	01421066	Mathematical model	36	2	2	Polytechnic Institute	
Degree Courses	01311030	Mechanical engineering research front	36	2	1	Logistics Institute	compulsory course, starting from master degree4 credits, starting from bachelor degree14 credits
	01311002	Advanced Design Methods	36	2	1	Logistics Institute	
	01311003	Mechanical vibration and control	36	2	1	Logistics Institute	
	01311004	Manufacturing System modeling theory and method	36	2	1	Logistics Institute	

Course category	Course No.	Course name	Hour	Credit	Semester	School	Remark
	01311005	Digital Manufacturing Technology	36	2	1	Logistics Institute	
	01311006	Modern Mechanical and Electrical Control Engineering	36	2	1	Logistics Institute	
	01311007	Modern Testing Technology and Signal Processing	36	2	1	Logistics Institute	
	01311008	The fatigue and failure of mechanic structure	36	2	1	Logistics Institute	
	01311001	Frontiers of Logistics Engineering	36	2	1	Logistics Institute	
	01311024	The generalized optimization method	36	2	1	Logistics Institute	

Course category	Course No.	Course name	Hour	Credit	Semester	School	Remark
Optional Courses	01813001-004	The second foreign language (French, Japanese, German, Russian)	72	4	2	Foreign Language Institute	If you have not completed the second foreign language after graduating from master degree,the course will be compulsory. starting from master degree2 credits, starting from bachelor degree8 credits; You can choose any 1-2 credits in this school.
	02112101	An Anthology of Marxist Classics	18	1	1	Marxism Institute	
	01312028	The Technology of Logistics Information System	36	2	2	Logistics Institute	
	01312036	Supply Chain Management Methodology	36	2	2	Logistics Institute	
	01312009	Complex system simulation	36	2	1	Logistics Institute	
	01312010	Bulk Mechanics and Handling Technology of Bulk Material	36	2	2	Logistics Institute	

Course category	Course No.	Course name	Hour	Credit	Semester	School	Remark
	01312011	Product Modeling and Intelligent Design	36	2	1	Logistics Institute	
	01312012	Key Technology of Port Logistics Equipment	36	2	2	Logistics Institute	
	01312013	Robotics	36	2	2	Logistics Institute	
	01312014	Distributed sensing and control system	36	2	2	Logistics Institute	
	01312015	Mechanical structural analysis and safety evaluation	36	2	2	Logistics Institute	
	01312016	Machine Fault Diagnostics	36	2	2	Logistics Institute	
	01312017	Virtual Test and Application	36	2	2	Logistics Institute	
	01312018	Electro-hydraulic control system	36	2	2	Logistics Institute	

Course category	Course No.	Course name	Hour	Credit	Semester	School	Remark
	01312019	Virtual Test Technology and Application	36	2	2	Logistics Institute	
Compulsory part	01314001	Logistics Institute`s Dr. Practice	36	2	6	Logistics Institute	
	01314002	Dr. topic report	18	1	3	Logistics Institute	
	01314003	Logistics Institute, Dr. Academic Activities	18	1	3	Logistics Institute	