

School of Communication Engineering

Subject: Electronic and Communication Engineering Code: 0852

I. Educational Goal

The electronic and communication engineering full-time professional master degree is a professional degree related to the job requirements in electronic and communication engineering. The program trains applicable, comprehensive advanced engineering technique and engineering management personnel with solid foundation, all-round qualities, good engineering practice ability, and innovational ability. The detailed goals are as follows.

Support the Party's basic lines and policy, have ardent love for the motherland, observe disciplines and obey laws, have good professional ethics and dedication, have scientific, rigorous and truth looking-for, practical study attitude and work style.

2.

Master fundamental theories, advanced technique methods and modern technique methods, know about current technique state and future trends in related areas, capability to independently do the work of communication engineering design and operation, analysis and combination, research and development, management and decision in communication projects in electronic and communication areas

3. Be capable of the work of high-level engineering technique and engineering management in electronic and communication engineering areas.

4. Master a foreign language, able to read domestic and international literature in the field without difficulty.

5. Healthy

II. Majors and Research Directions

1. Electronic Engineering (second-level subject code: 085208) Research Directions: ① Embedded System Design ② Signal and Information Processing ③ Digital Communication Technology ④ Multi-media Communications and Technology ⑤ Personal Communications and Mobile Communications ⑥ Communication Networks and Information Security Technology ⑦ Wireless Communication Systems ⑧ Photoelectric detection and optical communication systems ⑨ Telecommunication Planning and Information Management ⑩ Network Optimization Design

III. Program Duration

The program duration of this subject is 2.5 years, in which there is 1 year for course learning and the other 1.5 years for professional master students to take part in professional practice, research, thesis writing and oral defense.

IV. Educational Modes and Principles

1. Program structure and credit requirements

The time for course study is two semesters. The curriculum consists of degree courses, non-degree courses and the required procedure. The master courses include common course, specialized basic course and specialized core course; the non-degree courses include specialized elective course and common elective course. The minimum requirement on credits for master students in course study stage is 28 credits, including 17 credits for degree course, 8 credits for non-degree and 3 credits

for the required procedure, but the total credits should not exceed 33.

(2) Students, with the guide of supervisors, are allowed to choose to study specialized basic degree courses, specialized core degree courses and specialized elective courses in other subjects and the credits can be counted as elective course (including specialized elective courses and common elective courses) credits in this subject program.

(3) Students, with the guide of supervisors, are allowed to choose to study extra specialized degree course in this subject program. The credits can be counted as elective course (including specialized elective courses and common elective courses) credits in this subject program.

2、Supervisor-responsibility system and program requirement

Students are co-supervised by two supervisors. The industry co-supervisor needs to advise students to take part in practice, project research, related course and thesis.

3、Others

(1) Full-time professional degree master postgraduates are trained with the combination of course study, professional practice and degree thesis. The course study usually is completed in 1 year (The course study is conducted mainly on campus).The minimum time for practice is 0.5 year and the minimum time for the newly graduated bachelor is 1 year in general. The degree thesis should be coupled with the professional practice and the working time for thesis should not be less than 1 year.

(2) It focuses on practical research and innovation ability training, practical working experience increasing and professional quality and employment ability improving.

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Curriculum for Electronic and communication engineering

Type	Names of Courses	Class Hours	Credits	Semester				Method of Assessment	Written	
				1	2	3	4			
Master's Degree Course	Common Course	Study on The Theory and Practice of Socialism with Chinese Characteristics	32	2	2				Exam	
		English	48	3	3				Exam	
	Specialized Basic Course	Theory of Information and Coding	48	3	3				Exam	
		Selected Topics in Mathematics for Information Engineering	48	3	3				Exam	
	Specialized Core Course	Digital Communications	48	3		3			Exam	
		Mobile Communications and Personal Communications	48	3	3				Exam	
		Advanced Digital Signal Processing	48	3		3			Exam	
		Modern Algebra and its Applications	48	3	3				Exam	
									Exam	

									Exam		
	Required	Credits	17-19								
Non-Master's Degree Course	Specialized	Elective Course	Optimization in Modern Communication Networks	48	3	3				Test	
			Signal Detection and Estimation	48	3	3				Test	
			Principle of Software Defined Radio	48	3		3			Test	
			Adaptive Signal Processing	48	3		3			Test	
			IP Switch Technologies	48	3		3			Test	
			Speech and Image Processing and Transmission	48	3		3			Test	
			Principles and Applications of Digital Signal Processor	32	2		2			Test	
			Information Security Technique	48	3		3			Test	
			Optical Networks	32	2	2				Test	
			Wireless Communications Principles and Practice	48	3		3			Test	
			Wavelet Analysis and Time-Frequency Analysis	48	3		3			Test	
			Modern Cryptography	48	3		3			Test	
			Spread Spectrum Communication	48	3		3			Test	
			Optoelectronics and Experiment	48	3	3				Test	
			Principle and Technology of Advanced Optical Fiber Communications	48	3		3			Test	
	Required	Credits	6-8								
Common	Elective Course	Introduction to Dialectics of Nature	32	1	2	2			Test		
		Stress management and potential development	16	1	2	2			Test		
		English Speaking & Listening	32	1	2	2			Test		
		Second Foreign Language	32	1	2	2			Test		
		Scientific Index Search	16	1	2	2			Test		
		Enterprise Management	16	1	2	2			Test		
		Intellectual Property	16	1	2	2			Test		
		PE	32	1	2	2			Test		
									Test		
									Test		
	Required	Credits	2-3								
	Required Credits	8-11									
Required	Procedure	Literature Survey and Thesis Proposal		1		▲	▲		Test		
		Teaching or Engineering Practice		1			▲	▲	Test		
		Research Thesis and Academic Report		1			▲	▲	Test		

	Required Credits	3
Total Credits	28-33	

VI、 Thesis

1、 Requirements on thesis (on quality and format)

The thesis can be in the forms of fundamental research thesis, plan design report, product development technique report. The content of the thesis can be engineering design and research, technique research or technique improvement scheme research, engineering software or application software development and etc. The format should be formal.

2、 program structure and requirements on research and practice

The program structure is practical application oriented, aims at career demands. The lectures focus on good combination of theory and applicability. The research and required practical procedure provide professional state-of-art talk and professional practice. Professional practice is conducted in the way that students work and study in internal and external practical base, subject lab, take part in supervisor' s industrial project. In general, such work should be related to thesis work.

3、 Research Topics selection and starting

The degree thesis work can be combined with profession practice work, which generally is co-supervised by the industrial and internal supervisors. Topic selection of the thesis should directly sourced from production practice, or it has clear production background and application values. The thesis work should demonstrate a certain technique difficulty or theory depth, show the student' s ability to comprehensively use scientific theory, methods and techniques to solve practical problems. The outcomes of the thesis are with advanced feature and applicability.

Topic selection should be completed by the third semester.

4、 Thesis defense

The procedure of thesis at least includes starting, mid-term examination and thesis defense.

The thesis defense should be completed by the end of the first month in the fifth semester. There should be two thesis examiners, one of which is external experts. There should be 5-7 experts in the defense committee and the chair should be an external expert.

5、 Graduation and Degree Award

Postgraduates are allowed to graduate, obtain the certificate of the engineering master postgraduate, when they completed required course and obtain enough credits, get satisfactory grade, complete thesis work and pass the thesis defense. Students who meet the graduation requirements can apply for degree and can be awarded with engineering master professional degree in the field with the approval of the degree committee of Hangzhou Dianzi University.

VII、 Others