



Graduate Program for Electronic Science & Technology

School	School of Physics and Mechanical & Electrical Engineer	Student Type	Master & PhD				
Discipline	Electronic Science & Technology	Discipline Code	0809				
Subject included	Physical Electronics (080901); Microelectronics and Solid-State Electronics (080903); Electromagnetic Field and Microwave Technology (080904); Photovoltaic Engineering (0809Z1); Radio Physics (070208)						
Length of Study	Master 3 years; PhD 4 years						
Credit Requirements	Master ≥ 23 credits: ≥ 20 credits for courses, 3 credits for other academic sections.						
	PhD ≥ 12 credits: ≥ 8 credits for courses, 4 credits for other academic sections.						
Program Objectives	<p>After completing this program, masters are expected to (1) grasp the basic theories, specialized knowledge, and experimental skills of electronic science and technology; (2) acquaint themselves with the development, trend and the newest academic outcomes in their chosen field; (3) equip themselves with the ability to do scientific researches with a computer and other advanced instruments; and (4) be proficient in teaching, researching, developing and managing technology in the field of electronics science and technology.</p> <p>PhDs are expected to (1) have a great knowledge of science and technology; (2) grasp the basic theories and research methods of their chosen field systematically; (3) acquaint themselves with the development of their chosen field; (4) equip themselves with the ability to do researches innovatively with a computer and other advanced instruments; and (5) be eligible for researching, teaching, developing and managing technology in their field.</p>						
Requirements of Research Ability and Other Aspects	<p>Masters are required to (1) be of the ability to read foreign literature; (2) grasp basic theories and specialized knowledge of electronic science and technology; (3) employ advanced instruments skillfully during their research; (4) do well in academic writing and academic exchange; (5) be eligible for doing scientific researches and dealing with practical problems.</p> <p>PhDs are required to (1) have a good command of the development of electronic science and technology; (2) be of the ability to do research innovatively and independently; (3) be of the ability to analyze and solve problems; (4) be of the ability to analyze and process academic outcomes; (5) do well in academic writing and academic exchange.</p>						
Curriculum							
(*SP -Spring semester; FA-Fall semester; SU-Summer semester; C-Compulsory; O-Optional)							
Category	Course Code	Course Name	Credit	Semester	Master	PhD	Remarks



General Courses: Master 4 credits, PhD 2 credits	000010101	China's Marxism and Contemporary	2	FA		C	
	000010201	First foreign language	2	FA\SP	C	O	
	000010102	Study on theory and practice of socialism with Chinese characteristics	1	FA\SP	C	O	
	000010104	Dialectics of nature	1	FA	C	O	
Compulsory Courses: Master ≥ 10 credits, PhD ≥ 1 credit	090010001	Numerical Analysis	3	SP	C	O	1 out of the 2
	090010002	Matrix Theory	3	FA	C	O	
	090410001	Modern Electronics Techniques	3	SP	C	O	1 out of the 4
	090420001	Semiconductor Physics and Devices	3	SP	C	O	
	090420002	Basics of Nuclear Magnetic Resonance	3	FA	C	O	
	090420003	Micro-nano devices and their applications	3	FA	C	O	
	090420004	The Basis of Microwave Engineering	3	FA	C	O	
090010003	Literature retrieval and Scientific writing in English	1	SP	C	C		
Optional Courses	090430001	Instrument Design Technology	2	FA	O	O	
	090430002	Molecular Imaging Technology	2	FA	O	O	
	090430003	Experimental methods of magnetic resonance spectroscopy and imaging	2	FA	O	O	
	090430004	Modern Instrumental Analysis	2	FA	O	O	
	090430005	Magnetic Resonance Analysis	2	SP	O	O	
	090430006	High-Dimensional Data Analysis and Modeling	2	SP	O	O	
	090430007	Novel NMR Techniques and Their Applications	2	SP	O	O	
	090430008	Advanced Programming Techniques	2	SP	O	O	



090430009	Solid-state lighting technology	2	SP	O	O	
090430010	Modern Signal Processing	2	SP	O	O	
090430011	Discharge Plasmas and Their Applications	2	SP	O	O	
090430012	Antenna Theory and Design	2	FA	O	O	
090430013	Microwave and Millimeter Wave Circuits	2	FA	O	O	
090430014	Computational Electromagnetics	2	FA	O	O	
090430015	Electromagnetic and Acoustic Detection Technology	2	FA	O	O	
090430016	Bioelectromagnetics	2	SP	O	O	
090430017	Nano photonics and its applications	2	SP	O	O	
090430018	Terahertz and Opto-electronic Technology	2	SP	O	O	
090430019	Array Signal Processing and Smart Antennas	2	SP	O	O	
090430020	Electromagnetic Compatibility	2	SP	O	O	
090430021	Photovoltaic Materials	2	SP	O	O	
090430021	Photoelectric Measurement Techniques	2	SP	O	O	
090430022	The Theoretics, Materials, Devices and Application of Photovoltaic Power Generation	2	SP	O	O	
090430023	Semiconductor Processing and Its Applications	2	SP	O	O	
090430024	Energy Technology and Engineering	2	FA	O	O	
090430025	Chemical Thermodynamics	2	FA	O	O	
090430026	Transmission electron microscopy	2	SP	O	O	
090430027	Foundation of Microelectromechanical Systems	2	FA	O	O	



	090430028	Fundamentals and Latest Developments of Microelectronic Devices	2	FA	O	O	
	090430029	Electronic System Design	2	SP	O	O	
	090430030	Thin Film and Technology	2	FA	O	O	
	090430031	New energy materials and devices	2	SP	O	O	
	090430032	Microfluidic Device	2	SP	O	O	
	090430033	Solid-state lighting and photovoltaic system	2	FA	O	O	
	090430034	Semiconductor Science and Technology	2	SP	O	O	
Other Requirements	<p>1. For courses selection, supervisors are required to provide necessary advice and suggestions; courses selected by postgraduates must be approved by the supervisor.</p> <p>2. Candidates shall select at least 1 cross-disciplinary course, but the maximum credit they can earn is 4.</p> <p>3. PhDs under the program of Master-PhD are exempted from politics theory courses during their doctoral studies, but they are required to replenish the credit loss by taking other optional courses.</p> <p>4. PhDs enrolled from other majors or other colleges and universities must take the compulsory courses, among which candidates can apply for an exemption for courses which they have already completed with their school report card, and replace them with other courses.</p>						
Other Academic Sections (C-Compulsory; O-Optional)							
Category	C or O	Credit	Requirements	Evaluation (Ways and time)			
Academic Lectures	C	0.5	Masters shall attend at least 10 academic activities organized by the school or the university; PhDs shall attend at least 15 academic activities.	Candidates are required to write a report with about 800 characters for each activity they attend. The report shall cover the following elements: when, where, who (keynote speaker) and what (topic), and his/her own opinions about the topic, and the inspiration he/she gets from the academic activity.			
Mid-term Assessment	C for PhDs	1	The assessment committee together with the candidate's supervisor will examine his/her doctoral study and test scores. Candidates' research ability is also considered. The thesis proposal is	The mid-term assessment is usually held in the last month of the third semester, and PhDs are required to report to the assessment committee with a PPT. Those who get a "Pass"			



			evaluated as well.	for the assessment are allowed enter into the thesis writing phase.
Literature Review and Research Report	C	0.5	<p>Masters shall deliver at least 4 academic reports and/or progress reports on thesis writing to the supervisor's research team.</p> <p>PhDs shall deliver at least 6 academic reports and/or progress reports on thesis writing to the supervisor's research team.</p> <p>PhDs shall deliver a comprehensive report on the field they study and their thesis prior to the thesis defense.</p>	<p>The assessment shall be conducted by the supervisor committee and reported to the teaching secretary for the record.</p>
Thesis Proposal	C	1	<p>1. The thesis proposal shall include: the source of the subject, the purpose and the significance of the research, an analysis of the status quo of the research and its development trend at home and abroad, main points of the thesis, research program and scheduling, expected results, and conditions and fund needed, potential obstacles and problems and solutions, and main references.</p> <p>2. The thesis proposal report examination shall be organized publicly for candidates of the same program. Candidates shall submit before the examination the literature review to the examination committee for examination and approval. Candidates who change their thesis subject shall apply for the thesis proposal examination for the new subject on the condition that the change is warranted.</p> <p>3. Prior to the application for a thesis defense, candidates must take the thesis proposal examination. There must be at least one complete semester between the semester when the thesis proposal examination is held and the semester when the thesis defense is held.</p>	<p>1.The thesis proposal examination is usually held in the third semester.</p> <p>2. The examination committee is usually composed of 3-5 supervisors. If there involve cross-discipline subjects, experts from other disciplines shall be invited.</p>



Social Practice	C for masters (1 out of the 2)	1	Under the guidance of the supervisor, candidates shall participate in scientific research training or engineering practice organized by the college, the institute, and/or the supervisor.	On the completion of the social practice and/or the teaching practice, candidates are required to fill out the Report on Social Practice of Postgraduates of Xiamen University. The report on social practice shall be examined and approved by the leading teacher with signature. The report on teaching practice shall be examined and approved by the supervisor with signature. The report shall be submitted to the college for the record. The practice counts 1 credit.
Teaching Practice			Candidates shall work as the teaching assistant to the supervisor. The teaching practice can be instructing exercises, correcting and marking assignments, and instructing undergraduates' graduation projects under the guidance of the supervisor. Accumulated work load shall be at least 32 hours. shall be no less than 32 hours.	
Inter-Campus Communication and Exchange	C for PhDs	1	PhDs shall attend more than 1 international academic conference.	It shall be evaluated by the supervisor team and the results shall be submitted to the teaching secretary for the record.
Thesis	<p>1. Under the guidance of the supervisor, the candidate shall complete the thesis writing independently.</p> <p>2. A systematic and complete thesis shall include: abstracts in Chinese and English, source of the subject, its development at home and abroad, theoretical analyses, experiments and calculations, research results, references, etc. The thesis shall be concise with a correct argument and reliable data. It shall be innovative in its theoretical analyses, computing methods, experiment techniques, devices, techniques, etc.</p> <p>3. Masters shall allocate at least 1 year for the thesis writing, and PhDs at least 2 years. The thesis shall display the candidate's ability in solving problems with relevant theories, methods, and technological methods, and the grasp of basic theories and specialize knowledge.</p> <p>4. The thesis defense. Prior to the thesis defense, candidates shall take the mock viva organized within the supervisor's research team and make corresponding revisions and improvements. The thesis defense shall be carried out according to the Regulations on Postgraduates' Degree Application and Thesis Defense of Xiamen University.</p>			
Major References and Journals (C-Compulsory; O-Optional)				
No.	Title	Author	Evaluation*	Remarks (C or O)



<p>Evaluation ways: 1. Examination: Knowledge of references and journals to be covered on the examination;</p> <p>2. Examination on thesis proposal or comprehensive examination;</p> <p>3. Reading Report;</p> <p>4. Other specific ways.</p>				