05 Objectives & Learning Outcomes for Electronic Information Engineering

Brief Introduction: This program is the training plan for the Electronic Information Engineering of Changchun Institute of Technology. Based on the engineering application backgrounds of communication, automotive, medical, Internet of Things and other industries, it aims to cultivate high-quality application-oriented talents with all-round development of moral, intellectual, physical, aesthetic and labor education. Through systematic study of mathematics, natural science, engineering fundamentals and professional courses, students will master the core knowledge and skills in the field of electronic information engineering, and possess strong practical ability, innovative awareness, critical thinking and international vision.

1. Training Objectives

Based on the engineering application backgrounds of communication, automotive, medical, Internet of Things and other industries, this major aims to cultivate high-level application-oriented professionals with all-round development of moral, intellectual, physical, aesthetic and labor education, professional literacy, innovative awareness, international vision and social responsibility, who can engage in development, design, testing, production operation, project management and other work in electronic information-related fields such as intelligent hardware, signal and image processing. After about 5 years of study and engineering practice, students will become technical and management key personnel in the electronic information field. The specific professional competencies are as follows:

Training Objective 1: Possess good humanistic accomplishment, professional ethics and social responsibility, physical and mental health, and consciously abide by laws and regulations and practice core socialist values.

Training Objective 2: Have the spirit of innovation and the ability to develop,

design, test, operate and manage systems or products in electronic information fields such as intelligent hardware, signal and image processing, and can design and effectively implement solutions to complex electronic information engineering problems.

Training Objective 3: Have good team awareness and collaboration ability, be able to work independently or in cooperation, and manage interdisciplinary projects under the constraints of society, health, safety, law, culture and environment.

Training Objective 4: Possess the international vision of an engineer and clear oral and written expression skills, and be able to conduct cross-disciplinary and cross-cultural communication and exchange.

Training Objective 5: Have the ability of independent learning and lifelong learning, and be able to actively adapt to the development of the electronic information industry and industrial upgrading, and continuously track new technologies, new forms and new models of the major.

2. Discipline-Specific Standards

The discipline-specific standards for Electronic Information Engineering fully reflect the requirements for competencies in knowledge and understanding, cross-disciplinary ability, engineering methodology, engineering development, engineering practice and product development.

1.Engineering Knowledge: Master solid fundamentals of mathematics, natural science and engineering, be able to apply mathematics, natural science, engineering fundamentals and professional knowledge of electronic information engineering to solve complex electronic information engineering problems, and understand the broader ethical and interdisciplinary backgrounds in the engineering field.

2.Problem Analysis: Be able to apply the basic principles of mathematics, natural science and engineering science to identify, express and analyze complex electronic information engineering problems through literature research to obtain effective conclusions.

3.Design/Development of Solutions: Design electronic information systems, electronic products or technological processes that meet specific needs for solutions to complex electronic information engineering problems, be able to reflect innovative awareness in the design process, and take into account social, health, safety, legal, cultural and environmental factors.

4.Research: Be able to conduct research on complex electronic information engineering problems based on scientific principles and using scientific methods such as testing, experimentation, data analysis and interpretation, and draw reasonable and effective conclusions through information synthesis.

5.Use of Modern Tools: Develop, select and use appropriate technologies, resources, modern engineering tools and information technology tools for complex electronic information engineering problems to realize the testing, analysis, prediction, simulation and development of such problems, and understand their limitations.

6.Engineering and Society: Be able to analyze and evaluate the impact of professional engineering practices and solutions to complex engineering problems in the electronic information field on society, health, safety, law and culture based on relevant background knowledge of electronic information engineering, and understand the corresponding responsibilities.

7.Environment and Sustainable Development: Understand and evaluate the impact of professional engineering practices for complex electronic information engineering problems on the environment and social sustainable development.

8.Professional Norms: Possess the accomplishment of humanities and social sciences, social responsibility and professional ethical ability, and be able to shape social progress with critical thinking, a sense of responsibility and the professionalism in electronic information engineering practice.

9.Individual and Team: Have the spirit of team cooperation and be able to take on the roles of individual, team member and leader in interdisciplinary teams.

10.Communication: Possess foreign language knowledge related to

professional practice, be able to communicate and exchange effectively with industry peers and the public on complex electronic information engineering problems, including writing technical reports and design documents, making presentations, expressing or responding to instructions clearly, etc., and have a certain international vision to communicate and cooperate in cross-cultural contexts.

11.Project Management: Understand and master the principles of engineering management and economic decision-making methods in the electronic information field, and be able to apply them in an interdisciplinary environment.

12.Lifelong Learning: Have the awareness of independent learning and lifelong learning, and the ability to learn and adapt to career development continuously.

3. Class Hours and Credits

Minimum credits required for graduation: 179 credits (230 ECTS Credits)

Minimum class hours required for graduation: 2138 class hours

The minimum credits required for the graduation of four-year undergraduate students is 179 credits (230 ECTS credits), including 161 credits for compulsory courses and at least 18 credits for elective courses (9 credits for general elective courses of the university). In the curriculum system, there are 39 credits for humanities and social science courses, 27 credits for mathematics and natural science courses, 59 credits for engineering and professional-related courses, 46 credits for engineering practice and graduation project, and 8 credits for quality development in the second classroom.

4. Academic System and Degree

Standard academic system: Full-time undergraduate, with a standard study period of four years and an allowed study period of 3 to 6 years.

Degree: Bachelor of Engineering

5. Core Disciplines and Curriculum System

5.1 Core Disciplines

Information and Communication Engineering, Electronic Science and Technology

5.2 Main Courses

Fundamentals of Computer Programming (C Language), Circuit Theory, Analog Electronic Technology, Digital Electronic Technology, Signals and Systems, Principles of Automatic Control, Electromagnetic Fields and Electromagnetic Waves, Data Structures and Algorithms, Information Theory and Coding, Digital Signal Processing, High-Frequency Electronic Circuits, Principles and Applications of Single-Chip Microcomputers, Communication Principles, EDA Technology and Applications, Digital Image Processing, Cortex-M3 Development Technology and Practice, RFID Development Technology and Practice.

5.3 Main Practical Links

Engineering Training, Professional Cognitive Practice, Electronic Technology Practice, Matlab Fundamentals and Application Training, Electronic Circuit PCB Design Training, Curriculum Design of Single-Chip Microcomputer System Application, Curriculum Design of EDA Technology and Application, Curriculum Design of Embedded System Application, Professional Foreign Language Training for Electronic Information, Comprehensive Practice of Intelligent Hardware, Comprehensive Training of Signal and Image Processing, Enterprise Production Practice, Graduation Project (Thesis).

6.The Relationship Matrix of Training Objectives,Subject Specific Standards and Curriculum System

6.1 Discipline-specific Standards Supporting the Training Objectives Matrix

Graduation Training Objectives	Training Objective 1	Training Objective 2	Training Objective 3	Training Objective 4	Training Objective 5
Discipline-Specific Standard 1		H			

Discipline-Specific Standard 2		H			
Discipline-Specific Standard 3		H			H
Discipline-Specific Standard 4		H			H
Discipline-Specific Standard 5		H			H
Discipline-Specific Standard 6	H				
Discipline-Specific Standard 7	H				
Discipline-Specific Standard 8	H				
Discipline-Specific Standard 9	M		H	H	
Discipline-Specific Standard 10			H	H	
Discipline-Specific Standard 11			H		
Discipline-Specific Standard 12				M	H

6.2 The Curriculum System Supports the Subject Specific Standard Matrix

Indicator / Points / Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
																							H											
Ideology, Morality and the Rule of Law																							H											
Outline of Modern and Contemporary Chinese History																							H											
Basic Principles of Marxism																							H											
Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics																							H											

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
Introduction to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era																							H											
Situation and Policies																														H				
College English																									H	H								
College Physical Education and Health																							M											
Military Theory																									H									
College Students' Mental Health Education																							H											
Learning and Building a Dream					L											M																		
Big Data and Artificial Intelligence																							M											

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
History of the CPC/History of New China/History of Reform and Opening Up/History of Socialist Development																								M										
College Students' Career Guidance and Career Planning																								M		M								M
Foundation of Entrepreneurship										M																								
Innovation Methods and Practice	H																																	
Advanced Mathematics I	H																																	

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
Linear Algebra Ⅱ	H																																	
Probability Theory and Mathematical Statistics Ⅰ														H																				
College Physics Experiment Ⅱ	H																																	
College Physics Ⅰ	H																																	
Complex Functions																					H	H												
Introduction to Environmental Science																												H						
Engineering Drawing																H																		
Fundamentals of University Computer																	H																	
Fundamentals of Computer Programming	H	H											M	H	H																			

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
(C Language)																																		
Circuit Theory		H		M									H	H	H																			
Analog Electronic Technology		H		M									H	H	H																			
Digital Electronic Technology	H		H																															
Electromagnetic Fields and Electromagnetic Waves	H			H																														
Principles of Automatic Control		H	H											H	H																			
Signals and Systems	H		H			H																												
Information Theory and Coding																	H																	
Data Structures and			H			H											H																	

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
Algorithms																																		
Digital Signal Processing					H	H							H	H	H																			
High-Frequency Electronic Circuits					H		H	H									H																	
Principles and Applications of Single-Chip Microcomputers		H	H				H							H	H																			
Communication Principles				H				H									H																	
EDA Technology and Applications						H	H										H																	
Digital Image Processing							H	H									H																	
Cortex-M3 Development Technology and Practice				H				H									H																	

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
RFID Development Technology and Practice																	M																	
Java Programming/C++ Programming (Elective)				H		H											M																	
Python Machine Learning Practice (Elective)																M	M																	
Virtual Instrument Technology and Applications (Elective)			M				M						H	H	H																			
Sensor Detection Technology (Elective)					H			H									M																	
DSP Principles and Applications (Elective)				M			M	H									M																	
Zigbee Development Technology and Practice																H	M																	

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
(Elective)																																		
Android Programming (Elective)			H		H																													
Computer Communication Network (Elective)																															H	H		
Technical Economics/Engineering Economics/Engineering Project Management																									H		H							
Military Skills												M															M							
Engineering Training																			L	M								H	M				H	
Professional Cognitive Practice												H				H																		
Electronic Technology																H	H																	

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
Practice																																		
Electronic Circuit PCB Design Training																H	H																	
Matlab Fundamentals and Application Training									H	H								H										H						M
Curriculum Design of Single-Chip Microcomputer System Application									H	H								H										H						M
Curriculum Design of EDA Technology and Application									H	H	M																	H						M
Curriculum Design of Embedded System Application																													H					

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
Professional Foreign Language Training for Electronic Information											H	H							H									H				H		
Comprehensive Practice of Intelligent Hardware												H						H										H						
Comprehensive Training of Signal and Image Processing												H							H	H		M		H			H	H						
Enterprise Production Practice										H	H	H							H									H	H	H		H		H
Graduation Project																												H	L					
Writing and Communication											H												H											
College Aesthetics Education																							M											

Indicator / Points Teaching Activities	Standard 1				Standard 2			Standard 3				Standard 4				Standard 5			Standard 6		Standard 7		Standard 8			Standard 9		Standard 10			Standard 11		Standard 12	
	Engineering Knowledge				Problem Analysis			Problem Analysis				Research				Use of Modern Tools			Engineering and Society		Environment and Sustainable Development		Professional Norms			Individual and Team		Communication			Project Management		Lifelong Learning	
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	8.3	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
Labor Education and Practice																										H	H							
Innovation and Entrepreneurship Practice																					L			M									M	
Social Practice																										M								

Note: H (High), M (Medium), L (Low) indicate the correlation between the course and each graduation requirement.

7. Curriculum Structure and Allocation of Class Hours and Credits

Teaching Links / Theoretical Teaching	Class Hours (Weeks) Allocation				credit allocation			
	Total Class Hours/Weeks		Compulsory Class Hours/Weeks	Elective Class Hours/Weeks	Total Credits		compulsory credits	Elective credits
	Class hours or weeks	Proportion			credit	proportion		

Theoretical Teaching	Mathematics and Natural Science	432	20.2%	432	0	27.0	15.1%	27.0	0.0
	Engineering and Professional Related	944	44.2%	800	144	59.0	33.0%	50.0	9.0
	Humanities and Social Science	762	35.6%	628	134	39.0	21.8%	30.0	9.0
	Subtotal	2138	100%	1860	278	125.0	69.8%	107.0	18.0
Practical Teaching	Engineering Practice and Graduation Project (Weeks/Credits)	48	——	48	0	46.0	25.7%	46.0	0.0
Key Parameters	Total Teaching Weeks	151	Total Teaching Class Hours	2138		Second Classroom Quality Development	8.0	Total Graduation Credits	179.0
	Proportion of Practical Teaching Weeks in Total Teaching Weeks	31.8%		Proportion of Elective Class Hours in Total Teaching Class Hours		13.0%	Proportion of Elective Credits in Total Credits		10.1%

8.Teaching Arrangement

Course Category		Nature of the course	Course Code	Course Name	class hour			Credits	Offered Semester	Remarks	Offering Department
					Total Class Hours	Theoretical Class Hours	Practical Class Hours				
General Education Courses in Humanities and Social Sciences (762 class hour，39credit）	Public Compulsory Course（628 class hour，30credit）	obligatory	my01031010	Ideology, Morality and the Rule of Law	48	40	8	3.0	1		School of Marxism
			my02051010	Outline of Modern and Contemporary Chinese History	48	40	8	3.0	1		School of Marxism
			my03041010	Basic Principles of Marxism	48	40	8	3.0	3		School of Marxism
			my04212010	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	48	40	8	3.0	4		School of Marxism
			my04011010	Introduction to Xi Jinping Thought on	48	32	16	3.0	5		School of Marxism

				Socialism with Chinese Characteristics for a New Era							
			my05011011-8	Situation and Policies	64	56	8	2.0	1-8		School of Marxism
			wy01011011-2	College English 1-2	128	128	0	8.0	1-2		School of Foreign Languages
			ty01011011-4	College Physical Education and Health 1-4	128	128	0	2.0	1-4		Department of Physical Education
			ty04011010	Military Theory	36	36	0	1.0	1		Department of Physical Education
			xl01011010	College Students' Mental Health Education	32	24	8	2.0	1		College Students' Mental Health Education and Counseling Center
			total		**628**	**564**	**64**	**30.0**			
	Scho ol-wi	take as an	my0403 1020	Learning and Building a Dream	16	16	0	1.0	1	Compuls ory	School of Marxism

	de general education elective courses（134class hour，9.0credit）	elective course	jg05201020	Big Data and Artificial Intelligence	16	10	6	1.0	2	Compulsory	School of Computer Technology and Engineering
			my02031020	History of the CPC	16	16	0	1.0	2	Choose one from four	School of Marxism
			my02041020	History of New China	16	16	0	1.0	2		School of Marxism
			my04051020	History of Reform and Opening Up	16	16	0	1.0	2		School of Marxism
			my03031020	History of Socialist Development	16	16	0	1.0	2		School of Marxism
			dq04281021	College Students' Career Guidance and Career Planning Ⅰ	18	18	0	0.5	2	Choose one from four	School of Electrical and Information Engineering
			dq04281022	College Students' Career Guidance and Career	20	20	0	0.5	6	Choose one from four	School of Electrical and Information Engineering

				Planning Ⅱ							
			sc01011020	Foundation of Entrepreneurship	24	24	0	1.5	4	Choose one from four	School of Innovation and Entrepreneurship Education
			sc01021020	Innovation Methods and Practice	24	24	0	1.5	3	Compulsory	School of Innovation and Entrepreneurship Education
				Quality General Elective Courses				2.0	1-8		Academic Affairs Office
			total		**134**	**128**	**6**	**9.0**			
Mathematics and Natural Science Courses（432 class hour，	Mathematics, Physics, Chemistry, Environment and Sustainable Development	obligatory	lx01011011-2	Advanced Mathematics Ⅰ	160	160	0	10.0	1-2		School of Science
			lx02022010	Linear Algebra Ⅱ	40	40	0	2.5	2		School of Science
			lx02032010	Probability Theory and Mathematical Statistics Ⅰ	48	48	0	3.0	3		School of Science
			lx03022010	College Physics Experiment Ⅱ	32	0	32	2.0	2		School of Science
			lx03011	College Physics Ⅰ	96	96	0	6.0	2-3		School of Science

27 credit ）			011-2								
			lx02042010	Complex Functions	40	40	0	2.5	3		School of Science
			sh06321010	Introduction to Environmental Science	16	16	0	1.0	1		School of Water Conservancy and Environmental Engineering
			total		**432**	**400**	**32**	**27.0**			
Engineering Foundation Courses（400 class hour，25.0 credit	Core Professional Courses（Add notes★）	obligatory	jg04022010	Fundamentals of University Computer	32	16	16	2.0	1		School of Computer Technology and Engineering
			jg05021010	Fundamentals of Computer Programming (C Language)	48	24	24	3.0	2		School of Computer Technology and Engineering
			jd01202010	Engineering Drawing	40	40	0	2.5	2		School of Mechanical and Electrical Engineering
			dq01024	Circuit Theory	64	54	10	4.0	3		School of Electrical

)			010								and Information Engineering
			dq01031010	Analog Electronic Technology	56	46	10	3.5	4	★	School of Electrical and Information Engineering
			dq01041010	Digital Electronic Technology	48	40	8	3.0	5	★	School of Electrical and Information Engineering
			dq04011010	Signals and Systems	48	42	6	3.0	4	★	School of Electrical and Information Engineering
			dq03012010	Principles of Automatic Control	32	32	0	2.0	4		School of Electrical and Information Engineering
			lx03031010	Electromagnetic Fields and Electromagnetic Waves	32	32	0	2.0	4		School of Science
			total		**400**	**326**	**74**	**25.0**			
Basic Professional		obligatory	jg05111010	Data Structures and Algorithms	32	20	12	2.0	3		School of Computer Technology and Engineering

Courses（248 class hour，15.5 credit）			dq04021010	Information Theory and Coding	32	32	0	2.0	4		School of Electrical and Information Engineering
			dq04031010	Digital Signal Processing	40	34	6	2.5	5	★	School of Electrical and Information Engineering
			dq04041010	High-Frequency Electronic Circuits	48	38	10	3.0	5	★	School of Electrical and Information Engineering
			dq04051010	Principles and Applications of Single-Chip Microcomputers	48	36	12	3.0	5		School of Electrical and Information Engineering
			dq04061010	Communication Principles	48	36	12	3.0	6	★	School of Electrical and Information Engineering
			total		**248**	**196**	**52**	**15.5**			
Specialized courses（152 class hour，9.5		obligatory	dq04071010	EDA Technology and Applications	48	32	16	3.0	6		School of Electrical and Information Engineering
			dq04091010	Digital Image Processing	32	20	12	2.0	6		School of Electrical and Information Engineering

credit ）			dq04231 010	Cortex-M3 Development Technology and Practice	40	28	12	2.5	6		School of Electrical and Information Engineering
			dq04251 010	RFID Development Technology and Practice	32	20	12	2.0	6		School of Electrical and Information Engineering
			total		**152**	**100**	**52**	**9.5**			
Program Features （ take as an elective course 144 class hour，9.0 credit ）	Professional Development Course（ take as an elective course 120 class hour ，7.5credit）	take as an elective course	jg05071 020	Java Programming	32	16	16	2.0	4		School of Computer Technology and Engineering
			jg05081 020	C++ Programming	32	16	16	2.0	4		School of Computer Technology and Engineering
			dq04101 020	Python Machine Learning Practice	32	18	14	2.0	5		School of Electrical and Information Engineering
			dq04132 020	Virtual Instrument Technology and	24	6	18	1.5	5		School of Electrical and Information

				Applications							Engineering
			dq04142020	Sensor Detection Technology	32	26	6	2.0	5		School of Electrical and Information Engineering
			dq04082020	DSP Principles and Applications	32	20	12	2.0	6		School of Electrical and Information Engineering
			dq04221020	Zigbee Development Technology and Practice	24	16	8	1.5	6		School of Electrical and Information Engineering
			dq04241020	Android Programming	32	20	12	2.0	6		School of Electrical and Information Engineering
			jg05331020	Computer Communication Network	32	16	16	2.0	6		School of Computer Technology and Engineering
			total		**120**	**68**	**52**	**7.5**			
	Cross-disciplinary courses（Elective, 24 credit hours, 1.5	Select one	gl02113020	Technical Economics	24	24	0	1.5	6		School of Management
			gl04062020	Engineering Economics	24	24	0	1.5	6		School of Management

	credits）		gl06232020	Engineering Project Management	24	24	0	1.5	6		School of Management
			total		**24**	**24**	**0**	**1.5**			
Engineering Practice and Graduation Project (Thesis) （48week，46 credit）	Main Practical Teaching Components	obligatory			**Course ID**	**Project Name**	**number of weeks**	**credit**	**Semester of the course**	**remarks**	**accountability unit**
					ty04601010	Military Skills	3	1.0	1		Student Affairs Office
					gx00611010	Engineering Training	1	1.0	2		Engineering Training Center
					dq04601010	Professional Cognitive Practice	1	1.0	3		School of Electrical and Information Engineering
					dq04701010	Matlab Fundamentals and Application Training	1	1.0	3		School of Electrical and Information Engineering
					dq01611010	Electronic	2	2.0	4		School of Electrical and Information

				Technology Practice					Engineering
			dq04611010	Electronic Circuit PCB Design Training	2	2.0	5		School of Electrical and Information Engineering
			dq04632010	Curriculum Design of Single-Chip Microcomputer System Application	2	2.0	6		School of Electrical and Information Engineering
			dq04761010	Curriculum Design of EDA	2	2.0	6		School of Electrical and Information Engineering

				Technology and Application					
			dq04771010	Curriculum Design of Embedded System Application	2	2.0	7		School of Electrical and Information Engineering
			dq04711010	Professional Foreign Language Training for Electronic Informati	1	1.0	7		School of Electrical and Information Engineering

				on					
			dq04781010	Comprehensive Practice of Intelligent Hardware	6	6.0	7		School of Electrical and Information Engineering
			dq04791010	Comprehensive Training of Signal and Image Processing	4	4.0	7		School of Electrical and Information Engineering
			dq04752010	Enterprise Production Practice	6	6.0	7		School of Electrical and Information Engineering
			dq046	Graduati	15	15.0	8		School of Electrical

			91010	on Project					and Information Engineering
			total		**48**	**46.0**			
Second Classroom Quality Development (8 credits)		obligatory	**Course ID**	**Project Name**	**Class hours or weeks**	**credit**	Semester of the course	remarks	**Offering Department**
			gj01021010	Writing and Communication	16	1.0	2		School of International Education
			ml01011010	College Aesthetics Education	32	2.0	3		Center for Aesthetic and Labor Education
			xy01631010	Labor Education and Practice	32	1.0	5		Center for Aesthetic and Labor Education
			sc01601010	Innovation and Entrepreneurship Practice	32	2.0	1-8		School of Innovation and Entrepreneurship Education
			tw01601010	Social Practice	16	1.0	1-8		Communist Youth League Committee

		tw016 11010	Community Activities	16	1.0	1-8		Communist Youth League Committee
		total			**8.0**			
total		**2138 class hour /48 number of weeks**						

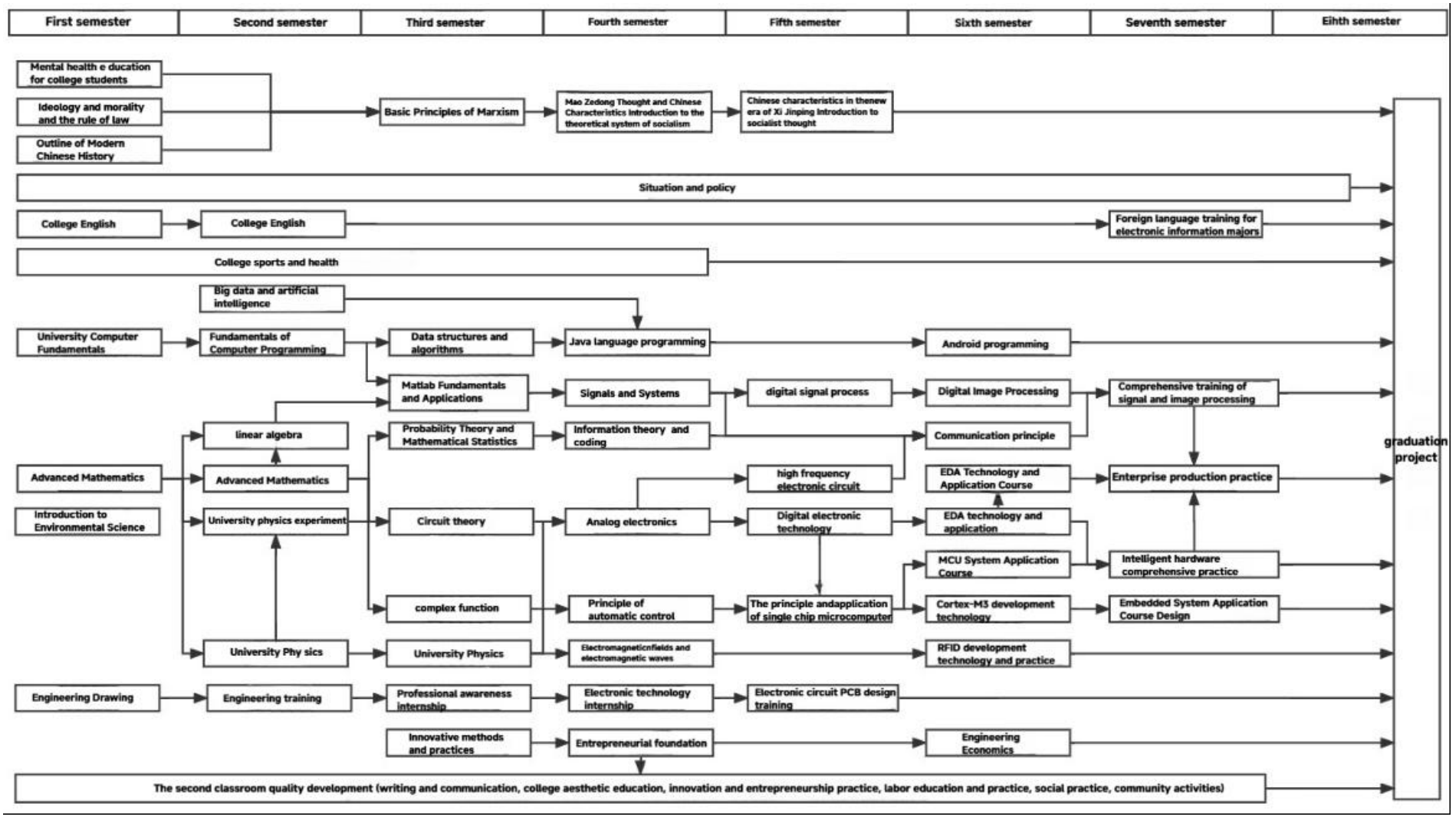

Figure 1 Logical Flowchart of Course Teaching Process