

Objectives-Module-Matrix

Objectives	Intended learning outcomes for the programme - Knowledge - Skills - Competences	Corresponding modules
<p>Mastery of the fundamentals of mathematical and physical natural sciences to provide a solid foundation for subsequent courses. Ability to apply basic knowledge and master various natural science methods</p>	<p>Basic scientific literacy and engineering ability</p> <p>Knowledge:</p> <ul style="list-style-type: none"> ● Knowledge of mathematics and natural sciences required for the program. <p>Skills:</p> <ul style="list-style-type: none"> ● Ability to apply basic knowledge of mathematics and natural sciences to understand and appropriately formulate engineering problems in the field of communications. <p>Competences:</p> <ul style="list-style-type: none"> ● Capable of developing appropriate models for problems in the areas of communication systems, signals and information processing, and to solve them correctly. 	<p>Module 1: Mathematics and Physics</p> <ul style="list-style-type: none"> ● Advanced Mathematics A ● Linear Algebra ● Complex Function and Integral Transformations ● Probability and Mathematical Statistics ● College Physics
<p>Mastery of solid professional knowledge, ability to analyse and research engineering problems in the field of communications based on professional knowledge, ability to conduct professional experiments, collect, analyse and interpret data.</p>	<p>Professional engineering knowledge and capabilities</p> <p>Knowledge:</p> <ul style="list-style-type: none"> ● Master the engineering fundamentals and professional knowledge, including aspects such as circuits, electronic systems, signal processing, and communication networks. <p>Skills:</p> <ul style="list-style-type: none"> ● Master the basic methods of electronic circuit analysis, design methods and related tools; ● Ability to apply methods and tools for communication signal analysis and processing. <p>Competences:</p> <ul style="list-style-type: none"> ● Capable of applying professional 	<p>Module 4: Engineering Fundamentals</p> <ul style="list-style-type: none"> ● Introduction to Information and Communication Engineering, ● Circuit Analysis ● Data Structure and Algorithm B ● Data Structure and Algorithm Experiment ● Signals and Systems ● Analog Electronic Technology ● Analog Electronic Technology Experiment ● Digital Electronic Technology ● Digital Signal Processing A ● Digital Signal Processing Experiment, ● Communication Principles ● Communication Principles Experiment

	<p>knowledge and information technology to carry out professional research and development based on the scientific method;</p> <ul style="list-style-type: none"> ● Capable of designing and conducting the necessary experiments and to obtain the correct results according to the specific characteristics of the communication engineering problem. 	<ul style="list-style-type: none"> ● Electromagnetic Fields and Waves ● Introduction to Artificial Intelligence B
<p>Acquire solid programming fundamentals and information retrieval methods, laying a solid foundation for subsequent professional and practical engineering courses that require software design and coding skills.</p>	<p>Ability in computer and information application</p> <p>Knowledge:</p> <ul style="list-style-type: none"> ● Knowledge of high-level programming languages; ● Knowledge of basic methods of information retrieval, collection and analysis. <p>Skills:</p> <ul style="list-style-type: none"> ● Proficient in the use of professional software tools and computer networks; solid code design skills; ● Ability to use computers and networks to collect literature, information, and data, and to screen, judge, and analyse them for useful information. <p>Competences:</p> <ul style="list-style-type: none"> ● Capable of combining professional knowledge in field of communications with computer-related knowledge, especially in software design, computer-aided design, analysis and simulation. 	<p>Module 3: Informatics</p> <ul style="list-style-type: none"> ● C Programming Language ● Literature Reading and Thesis Writing ● Object-Oriented Programming B <p>Module 8: Internship and Practical Training</p> <ul style="list-style-type: none"> ● Embedded System Design ● Internet of Things Application System Design
<p>Comprehensive knowledge of communication system design, diagnosis, optimisation, operation and management. Ability to propose design solutions and complete the design for specific problems and specific needs. Ability to acquire knowledge and seek solutions through the right methods.</p>	<p>Ability in professional application and practices</p> <p>Knowledge:</p> <ul style="list-style-type: none"> ● Master the basic knowledge related to engineering practices including hardware and software system design, equipment manufacturing, network solution design, and communications network operation and management. 	<p>Module 5: Engineering Applications</p> <ul style="list-style-type: none"> ● Principles and Design of Embedded Systems ● Principles and Design of Embedded Systems Experiment ● Internet of Things Communication Technology ● Internet of Things Communication Technology Experiment

<p>Ability to take health, eco-environmental and legal considerations into account during practice.</p>	<p>Skills:</p> <ul style="list-style-type: none"> ● Ability to analyse engineering problems in the field of communication, clarify relevant constraints and requirements, and propose solutions; ● Ability to properly carry out R&D, use professional tools to simulate and test, collect experimental data to analyse its effectiveness; ● Ability to complete the design and implementation of hardware and software modules or products. <p>Competences:</p> <ul style="list-style-type: none"> ● Capable of proposing valuable design solutions and complete design and development for specific needs of application products or systems in the field of communications, and demonstrate a certain sense of innovation; ● Capable of taking the initiative to acquire and learn the necessary knowledge and methods in engineering practice activities, and be aware of the necessity of lifelong learning and be able to practice it physically. 	<ul style="list-style-type: none"> ● EDA Technology and Application <p>Mobile Communication</p> <ul style="list-style-type: none"> ● Modern Switching and Communication Networks ● Communication Electronic Circuits <p>Module 6: Electives</p> <ul style="list-style-type: none"> ● Communication System Modeling and Simulation ● Software Radio Technology ● Optical Fiber Communication ● Information Theory and Coding ● Satellite Communication ● Analysis of Random Signals ● Satellite Navigation and Positioning Technology ● Deep Learning and Its Applications B ● Computer Vision B ● Cloud Computing and Big Data B ● Natural Language Processing B ● Machine Learning B <p>Module 8: Internship and Practical Training</p> <ul style="list-style-type: none"> ● Professional Cognition Internship ● Electronic Internship (1) ● Embedded System Design ● Digital System Design Based on FPGA ● Internet of Things Application System Design ● Comprehensive Design of Signal Processing ● Metalworking Practice (1) ● Comprehensive Design of Communication Engineering I ● Comprehensive Design of Communication Engineering II ● Comprehensive Training of Communication System ● Graduation Internship <p>Module 9: Bachelor Thesis/Capstone Project</p>
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<p>A solid grounding in a foreign language, the ability to listen, read and write, and the ability to communicate in a foreign language with collaborators from intercultural backgrounds on professional issues.</p>	<p>Ability in English and international communication</p> <p>Knowledge:</p> <ul style="list-style-type: none"> ● Master a foreign language; Master professional core knowledge in English. <p>Skills:</p> <ul style="list-style-type: none"> ● Ability to read professional literature in English and to communicate and discuss professional issues in English. <p>Competences:</p> <ul style="list-style-type: none"> ● Ability to communicate and co-operate in an intercultural context and to work in a multinational or foreign company. 	<p>Module 2: Foreign Language</p> <ul style="list-style-type: none"> ● College English (1&2&3&4) ● Interactive Practical English <p>Module 9: Bachelor Thesis/Capstone Project</p>
<p>Achieve all-round development in terms of morality, intelligence, physique, aesthetics, and work. Understand the current social models and norms in China. Demonstrate good social conduct, team spirit, and a strong sense of social responsibility.</p>	<p>Ability in cooperation and management</p> <p>Knowledge:</p> <ul style="list-style-type: none"> ● Master modern Chinese history, political theories, laws and regulations, cultivate patriotism, humanistic spirit and aesthetic awareness; ● Build a healthy physique and mental state; ● Master the basic theoretical knowledge, methods of enterprise management and engineering management. <p>Skills:</p> <ul style="list-style-type: none"> ● Understanding of social phenomena, attention and adaptation to social development; ● Ability to co-operate with others and good team spirit; ● Ability to participate in team communication, co-ordination and management. <p>Competences:</p> <ul style="list-style-type: none"> ● Capable of working in a competitive environment and be competent for the position; ● Develop a sound personality and good psychological quality, and establish 	<p>Module 7: General Courses</p> <ul style="list-style-type: none"> ● Morality and Fundamentals of Law ● Basic Principles of Marxism ● Outline of Chinese Modern History ● Introduction to Mao Zedong Thoughts and the Theoretical System of Socialism with Chinese Characteristics ● Introduction to Xi Jinping Thoughts on Socialism with Chinese Characteristics for a New Era ● Situation and Policy ● Physical Education ● Mental Health Education of University Students ● Military Theory and National Security Education ● Career Development and Employment Guidance for University Students ● Innovation and Entrepreneurship Education ● Engineering Economics ● Business Management ● Engineers' Professional Ethics and Responsibility

	<p>correct views on life, values, ethics, and law;</p> <ul style="list-style-type: none"> ● Possess good engineering literacy, humanistic literacy, and a sense of social responsibility. 	<ul style="list-style-type: none"> ● Comprehensive Practice of Ideological and Political Theory Courses ● Voluntary Labor <p>Module 8: Internship and Practical Training</p> <ul style="list-style-type: none"> ● Military Training and Entrance Education
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