

**Programme Module and
Curriculum Handbook of
Electronic & Information
Engineering**

V2021.03

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Programme Module and Curriculum Handbook of Electronic & Information Engineering

	Module Designation	Competence Profile	Fundamental Curriculum	Elective Curriculum	Practice
1	Self-Improvement Module	To possess correct ideological and political concepts and good physical fitness	Military Theory, Situation and Policy I, Situation and Policy II, Ideology, Morality, and Rule of Law, Outline of Chinese Modern History, Basic Principles of Marxism, Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics, Overview of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, Mental Health Education, National Security Education	National security education for college students (choose one of the two)	Military Skill Training, College Physical Education I, College Physical Education II, College Physical Education III, College Physical Education IV, Physical Fitness Assessment for College Students, Red Culture, Entrance Education, Great Youth Learning and Moral Education, Defence, Aesthetic education of college students, The New Era of Labor Education

2	Subject Basic Education Module	To improve the ability to apply mathematical knowledge and basic techniques of natural sciences to solve practical problems, and lay a solid foundation for future professional learning	Higher Mathematics I, Higher Mathematics II, Linear Algebra A, Probability and Mathematical Statistics A, University Physics I, University Physics II, Functions of a Complex Variable, Introduction to Artificial Intelligence Technology		
3	Computer Technology Module	To apply computer technology to electronic information engineering, and initially to have the awareness and ability to use computers to acquire knowledge, analyze problems, and solve problems	University Computer Foundation, C Language Programming, Visual C++ Programming, Linux Operating System		
4	Electronic Information Basis Module	To master the professional basic knowledge and skills to solve practical engineering	Circuit Analysis, Analog Electronic Technology, Digital Electronic Technology, Signals and Systems, Automatic Control Principle, Digital Signal		

		problems	Processing, Principle of Pattern Recognition		
5	Intelligent Terminal Hardware Development Technology Module	To apply theoretical knowledge and scientific tools to solve embedded system technical problems	Computer Composition Principle, Sensing and Detection Technology, Principle and Application of SCM, Principles and Application of Embedded System, High-Frequency Electronics Technology	<p>Elective Course</p> <p>Group 1: Computer Networks, Programmable Controller Principles and Applications, Electronic Measurement, Intelligent Electronic Product Design</p> <p>Debugging, Sensor Networks Application Development</p> <p>Elective Course</p> <p>Group 2: JavaScript Programming, Harmony OS Device Development Fundamentals, Comprehensive Practice in Terminal Application Development, Comprehensive Practice in Harmony OS Device</p>	Printed Circuit Board Design and Manufacturing, The EDA Technology and its Application

				Development	
6	Interdisciplinary Module	To possess international cooperation and intercultural communication skills, and have management skills	College English I, College English II, College English III, College English IV, Career and Development Planning, Employment Guidance for College Students, Foundation of Entrepreneurship, Theory of Inventive Problem Solving, College Chinese, Modern Enterprise Management, Literature Search, Social Etiquette	Artificial Intelligence, Language and Ethics (五选三), Automobile Journey (choose one of the two), Organizational Behavior (choose one of the two), Innovation China (choose three from five), Innovation, Invention and Patent Practice (choose three from five), Academic Norms and Ethics (choose three from five), Modern Physical Geography (choose three from five), SYB+GYB Training (choose one of the two)	Social Practice I, Social Practice II, Social Practice III, Handicraft Manufacture
7	Engineering Practice Module	To apply knowledge and scientific tools to solve complex problems in			Electronic Technique Skills Training, Comprehensive Programs Practice,

		electronic information engineering			Graduation Internship, Thesis (Graduation Design), Programme Skill Certificates
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Matrix Table of Courses' Supporting Relation to Curriculum Requirements Indicator Points

Graduation Requirements Curriculum Name		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12
		Self-Improvement Module	Military Skill Training						√		√	√	√
Military Theory							√	√	√				
Situation and Policy I									√		√		√
Situation and Policy II									√		√		√
Ideology, Morality, and Rule of Law							√		√	√	√		√
Outline of Chinese Modern History									√			√	√
Basic Principles of Marxism									√	√	√	√	√
Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics								√	√	√			√
Overview of Xi								√	√	√			√

Jinping Thought on Socialism with Chinese Characteristics for a New Era												
Great Youth Learning and Moral Education Defence							√		√	√	√	
Red Culture					√	√	√				√	√
National Security Education							√	√				√
College Physical Education I								√	√	√	√	
College Physical Education II								√	√	√	√	
College Physical Education III								√	√	√	√	
College Physical Education IV								√	√	√	√	
Physical Fitness Assessment for College Students								√	√	√	√	
Entrance Education					√		√	√				√
◆National security education for college students					√		√		√			√
Aesthetic education of							√					

	college students													
	The New Era of Labor Education								√					√
	Mental Health Education									√	√			√
Subject Education Module	Basic	Higher Mathematics I	√	√	√	√								
		Higher Mathematics II	√	√	√	√								
		Linear Algebra A	√	√	√	√								
		Probability and Mathematical Statistics A	√	√	√	√								
		University Physics I	√	√										
		University Physics II	√	√										
		Functions of a Complex Variable	√	√	√	√								
		Introduction to Artificial Intelligence Technology	√	√	√	√								
Computer Technology Module		University Computer Foundation	√	√	√	√	√						√	√
		C Language Programming	√	√	√	√	√						√	√
		Visual C++	√	√	√	√								

	Programming													
	Linux Operating System	√		√										
Electronic Information Basis Module	Circuit Analysis	√	√	√	√									
	Analog Electronic Technology	√	√	√	√									
	Digital Electronic Technology	√	√	√	√									
	Signals and Systems	√	√	√	√									
	Automatic Control Principle	√	√	√	√									
	Digital Signal Processing	√	√	√	√									
	Principle of Pattern Recognition	√	√	√	√									
Intelligent Terminal Hardware Development Technology Module	Computer Composition Principle	√	√	√	√									
	Sensing and Detection Technology	√	√	√	√									
	Principle and Application of SCM	√	√	√	√	√								
	Principles and Application of Embedded	√	√	√	√									

System													
The EDA Technology and its Application	√		√		√								
High-Frequency Electronics Technology	√	√	√	√									
Printed Circuit Board Design and Manufacturing	√	√	√		√								
◆JavaScript Programming	√	√	√	√	√								
◆Harmony OS Device Development Fundamentals	√	√	√	√									
◆Comprehensive Practice in Terminal Application Development	√		√	√	√								
◆Comprehensive Practice in Harmony OS Device Development	√		√	√	√								
◆Computer Networks	√	√	√	√									
◆Programmable Controller Principles and	√	√	√	√									

	Applications												
	◆Electronic Measurement	√	√			√							
	◆Intelligent Electronic Product Design Debugging	√	√	√	√								
	◆Sensor Networks Application Development	√	√	√	√								
Interdisciplinary Module	College English I					√			√	√	√		√
	College English II					√			√	√	√		√
	College English III					√			√	√	√		√
	College English IV					√			√	√	√		√
	Career and Development Planning								√	√	√	√	√
	Employment Guidance for College Students								√	√	√	√	√
	Foundation of Entrepreneurship								√	√	√		
	Theory of Inventive Problem Solving					√			√				√
	College Chinese							√	√			√	√

Modern Enterprise Management						√	√	√	√	√	√	
Literature Search					√				√			
Social Etiquette								√	√			
Social Practice I								√	√	√		√
Social Practice II								√	√			√
Social Practice III								√	√	√		√
Handicraft Manufacture								√	√	√		√
◆Automobile Journey						√	√	√	√	√	√	
◆Organizational Behavior								√	√	√		√
◆Artificial Intelligence, Language and Ethics						√	√	√		√	√	√
◆Innovation China								√		√	√	√
◆Innovation, Invention and Patent Practice					√	√	√	√				
◆Academic Norms and Ethics												√
◆Modern Physical Geography								√				√

	◆SYB+GYB TRAINING							√	√	√	√	√	√
Engineering Practice Module	Electronic Technique Skills Training	√	√	√					√	√			
	Comprehensive Programs Practice	√	√	√	√	√					√		
	Programme Skill Certificates	√							√				√
	Graduation Internship	√	√			√	√	√	√	√	√	√	√
	Thesis (设计)	√	√	√	√	√			√		√	√	√
Notes: ◆ indicates elective curriculum.													

Module One Self-Improvement Module

1. Military Skill Training

Military Skill Training

Curriculum Name	Military Skill Training		
Curriculum Level	Undergraduate Level		
Curriculum Code	11A21001		
Affiliated Modules	Self-Improvement Module		
School Term	1st Term		
Contact Person	Wu Bisheng		
Lecturers	○ ★ Wu Bisheng, ○ ★ Wang Long		
Language	Chinese		
Nature of The Curriculum	Compulsory		
Teaching Methods	Teacher-Centered Methods (Lecturing), Practice Methods (Simulations, Exercises, Field Instruction)		
Workload	<p>112 Total Hours (1 Credit = 1 Hour, 1 ECTS = 28 Hours)</p> <p>1. Lecture: 112 Hours (4 credits*28 hours to be completed in 2 weeks, an average of 56 hours per week, including practical teaching, discussion, and exercises).</p> <p>2. Self-Study: 0 Hours</p>		
ECTs Credits	4 Credit Points		
Recommended Prerequisites	_____		
Learning Outcomes and Their Corresponding ILOs	Curriculum Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objective (ILOs)

	CLO-1	Through the field practice of the military training, students are expected to develop the quality of perseverance and strong will. The physical fitness shall be enhanced, while promoting the formation and development of spiritual characters.	R6
	CLO-2	Through the military training, students shall experience hardship and form the quality of endurance. They shall learn to treat difficulties, failures, and tests calmly, to dare to struggle and challenge, and to transcend themselves. This also helps promote the all-round development of students' morality, intelligence, and physical fitness.	R8
	CLO-3	This course cultivates students' patriotism which is also significant in building up China's nationalism. It makes students more patriotic, more fond of the People's Liberation Army, enhancing their national security awareness and sense of crisis, as well as promoting the spirit of patriotism and the inheriting the spirit of Chinese revolutions. The course also encourages students' interest in enlisting Chinese Army to devote themselves in the development of Chinese Socialism.	R9, R10

Contents	<p>The Military Skill Training is a compulsory course for our students. It is jointly required by the Ministry of Education and the Joint Staff Department of the Chinese People’s Liberation Army, and is included in the talent cultivation system of ordinary universities in China. The results of the assessment are recorded in the student’s profile. According to the requirements of the revised <i>Teaching Syllabus for Basic Courses in Ordinary Universities</i> by the Ministry of Education, the General Staff Department, and the Political Department of the Chinese People’s Liberation Army, in order to enable university students to receive more comprehensive and realistic military skills training, and to further enhance the important role of military training in cultivating the patriotism, collectivism, and overall quality of university students, the quality and effectiveness of military skills training provided by universities in China shall be improved.</p> <p>Chapter I: Education and Training in Common Regulations</p> <p>Chapter II: Shooting and tactical training</p> <p>Chapter III: Defense Skills and Wartime Protection Training</p> <p>Chapter IV: Basic and applied training for combat readiness</p> <p>Chapter V: Comprehensive training</p>
Study and Examination Requirements and Forms of Examination	<p>The assessment is jointly organized and implemented by the school and the training instructor, and the grades are divided into four levels: excellent, good, qualified and unqualified. According to the students’ training time, performance and mastery, the grades of excellent, good, passing and failing correspond to the students’ performance points. That is, excellent (excellent military training students) corresponds to the student performance point 90, good corresponds to the student performance point 80, pass corresponds to the student performance point 60, fail corresponds to the student performance point 0.</p>
Media Employed	Computers, online sites
Reading List/Reference	<ol style="list-style-type: none"> 1. Xu Yan. <i>New University Military Theory Course</i> [M]. Beijing: Aviation Industry Press. 2022.

2. Military Theory

Military Theory

Curriculum Name	Military Theory		
Curriculum Level	Undergraduate Level		
Curriculum Code	11A21002		
Affiliated Modules	Self-Improvement Module		
School Term	1st Term		
Contact Person	Wu Bisheng		
Lecturers	○ ★ Wu Mingyuan, ○ ★ Zhou Liang, ○ ★ Xu Fei ★ Li Xinnan		
Language	Chinese		
Nature of The Curriculum	Compulsory		
Teaching Methods	Teacher-Centered Methods (Lecturing, Questioning), Interactive Methods (Class Discussion, Group Discussion)		
Workload	<p>Total hours 30 (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 30 hours (1 credit * 30 hours to be completed in 10 weeks, an average of 3 hours per week, including theoretical teaching, discussion and examination).</p> <p>2. Self-study: 0 hours</p>		
ECTs Credits	1 Credit Point		
Recommended Prerequisites	_____		
Learning Outcomes and Their Corresponding ILOs	Curriculum Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objective (ILOs)
	CLO-1	Students are expected to build a relatively complete system of military theoretical knowledge,	R6

		clarify the main factors affecting national defense construction, understand the aspects involved in national security, master the main content of the new military revolution and the basic knowledge of modern warfare.	
	CLO-2	Students are expected to gradually develop strategic thinking abilities, learn to use military theory to analyze, study, and judge military issues, and consciously safeguard national security while expanding their visions.	R7
	CLO-3	This course inspires students' love for their country and the PLA; enhances their national security awareness, state safety consciousness, and sense of crisis; promote the spirit of patriotism and the Chinese revolutions; and encourage them to actively enlist in the army and participate in socialist development.	R8
Contents	<p>Military Theory is a compulsory general education course. It is jointly required by the Ministry of Education and the Ministry of National Defense Mobilization of the Central Military Commission to be opened, incorporated into the talent training system of ordinary schools of higher education, included in the talent training program and teaching plan of the school, and managed under the credit system, with the results of the course assessment recorded in the academic file. The course is based on Xi Jinping's thought on strengthening the military and the important exposition on education, comprehensively implements the Party's education policy, the military strategy policy of the new era and the overall national security concept, focuses on the fundamental task of cultivating morality and the fundamental requirements of the goal of strengthening the military, strengthens the comprehensive national defense quality of college students, and serves for the implementation of the strategy of the integration of the development of the military and civil society and the construction of national</p>		

	<p>defense reserve forces.</p> <p>Chapter I: China's National Defense</p> <p>Chapter II: National Security</p> <p>Chapter III Military Ideology</p> <p>Chapter IV: Information Technology Weapons</p> <p>Chapter V: Modern Warfare</p>
<p>Study and Examination Requirements and Forms of Examination</p>	<p>The final exam for the course is in the form of an 100-minute long large assignment which makes up of 70% of the final grade. The remaining 30% of the final grade consists of out-of-class study results and attendance.</p>
<p>Media Employed</p>	<p>Projector, blackboard, PPT courseware, online websites</p>
<p>Reading List/Reference</p>	<ol style="list-style-type: none"> 2. Xu Yan. <i>New University Military Theory Course</i> [M]. Beijing: Aviation Industry Press. 2022. 3. Wang Zaobao. <i>New Theories of New Military Changes in the World</i> [M]. Beijing: People's Liberation Army Press, 2005. 4. The Editorial Committee. <i>Readings for Cadres on Overall National Security Concept</i> [M]. Beijing: People's Publishing House, 2016.

3. Situation and Policy I

Situation and Policy I

Curriculum Name	Situation and Policy I		
Curriculum Level	Undergraduate Level		
Curriculum Code	04A21001		
Affiliated Modules	Self-Improvement Module		
School Term	1st Term		
Contact Person	Su Li		
Lecturers	★Su Li ★Su Ren Zhong ★Yuan Jiao ★Huang Yusa ★Pi Jiaolin <input type="radio"/> Xu Xiaofeng <input type="radio"/> Zeng Weizhen <input type="radio"/> Zheng Guohuo		
Language	Chinese		
Nature of The Curriculum	Compulsory		
Teaching Methods	Teacher-Centered Method (Lecturing, Discussion)		
Workload	<p>Total hours 25 (1 credit = 1 hour, 1 ECTS = 25 hours)</p> <p>1. Lecture: 16 hours (1 credit * 16 hours, to be completed in 16 weeks, an average of 1 hour per week, including theory teaching, discussion, exercises, etc.).</p> <p>2. Self-study: 9 hours (1 credit * 9 hours, to be completed in 9 weeks, averaging 1 hour per week, including pre-class pre-study, post-class review, practice, homework, and test preparation).</p>		
ECTs Credits	1 Credit Point		
Recommended Prerequisites			
Learning Outcomes and Their Corresponding ILOs	Curriculum Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objective (ILOs)
	CLO-1	Students are expected to understand	R8, R10, R12

		the basic theories and foundational knowledge of analyzing and developing policies, including the scientific methods of analyzing and developing policies, the laws governing the development and the changes of situations, the origin and development of policies, and the essential characteristics of policies;	
	CLO-2	Students are expected to master the basic contents of the CPC's policies, and understand the series of policies formed since China's reform and opening up and the policy system that has been continuously improved in the process of building Chinese socialism.	R8, R10, R12
	CLO-3	Students are expected to enhance their abilities to correctly analyze and understand policies, especially on major events, sensitive issues, and social hotspots, difficulties, and points of contention both domestic and international.	R8, R10, R12
	CLO-4	Students are expected to perceive the national situations and public opinions, to experience the practice of the CPC's line and policy, to unify the understanding of the situation and policy to the scientific judgment of CPC and China and the correct decision-making, and to establish a correct ideologies on life and values.	R8, R10, R12

<p>Contents</p>	<p>“Situation and Policy I” is one of the compulsory ideological and political theory courses for undergraduates in colleges and universities across China. Through the study of the course, college students are expected to correctly understand the domestic and international situation in the 21st century, deeply understand the historic achievements, historic changes, historic opportunities and challenges achieved by the party and the country's undertakings since the 18th CPC National Congress, and is an important teaching link to promote the theoretical innovation achievements of the party into the textbooks, classrooms and students' minds in the first time, guide college students to accurately understand the party's basic theory, basic line, and basic strategy. It is a theoretical and political course offered simultaneously with “Ideological and Moral Law and Governance” after the enrollment of undergraduates, which will lay a certain ideological and political foundation for subsequent courses such as “Chinese Revolutionary Culture”, “Outline of Modern and Contemporary Chinese History”, “General Introduction to Xi Jinping’s Thought on Socialism with Chinese Characteristics”, “Basic Principles of Marxism”, “General Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics”.</p> <p>The <i>Current Affairs Report (College Edition)</i> published by the Propaganda Department of the CPC Central Committee and Current Affairs Report Magazine is a special textbook for the “Situation and Policy” course in universities. It closely combines the <i>Teaching Points for the Situation and Policy Courses in Colleges and Universities</i> issued by the General Office of the Ministry of Education. It profoundly expounds the basic theories and knowledge of situation and policy issues, as well as the basic content of the Party's lines, principles, and policies. It can help students perceive national conditions, public opinion, and social development trends, stand firm in their positions, establish correct political and life views, and thus train themselves to become qualified successors to socialism.</p> <p>Topic 1: Strive for a Century-long Journey and Embark on a New Journey</p> <p>Topic 2: Moving towards Higher-quality Economic Development</p> <p>Topic 3: Moving towards Higher-quality Economic Development (Note: This is a repetition of Topic 2, but I’ve translated it again to maintain consistency)</p> <p>Topic 4: Correctly Understanding China’s Population Issues</p> <p>Topic 5: Perfecting the “One Country, Two Systems” Institutional Framework to Ensure the Long-term Stability and Security of Hong Kong</p>
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	<p>Topic 6: Multilateralism: A Breakthrough Strategy for World Development</p> <p>Topic 7: Jointly Building a Community of Shared Future for Man and Nature</p>
Study and Examination Requirements and Forms of Examination	The final exam of this course is open-book, lasting 100 minutes. The final exam score accounts for 70% of the total score, while classroom assignments, extracurricular assignments, questions, discussions, etc. account for 30%.
Media Employed	Computer, Projector, Blackboard, PPT Courseware, Online Websites
Reading List/Reference	<p>(1) <i>Thirty Lectures on Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era</i>, Learning Publishing House, May 2018, ISBN 9787514708547.</p> <p>(2) <i>Xi Jinping: The Governance of China Volume I</i>, Central Propaganda Department, Central Document Research Office, China Foreign Languages Publishing Administration, Foreign Languages Press, September 2014, ISBN 9787119113920.</p> <p>(3) <i>Xi Jinping: The Governance of China Volume II</i>, Central Propaganda Department, Central Document Research Office, China Foreign Languages Publishing Administration, Foreign Languages Press, November 2017, ISBN 9787119111612.</p> <p>(4) <i>Xi Jinping: The Governance of China Volume III</i>, Central Propaganda Department, Central Document Research Office, China Foreign Languages Publishing Administration, Foreign Languages Press, June 2020, ISBN 9787119124094.</p>

4. Situation and Policy II

Situation and Policy II

Curriculum Name	Situation and Policy II		
Curriculum Level	Undergraduate Level		
Curriculum Code	04A21002		
Affiliated Modules	Self-Improvement Module		
School Term	2st Term		
Contact Person	Su Li		
Lecturers	★Su Li ★Su Ren Zhong ★Yuan Jiao ★Huang Yusa ★Pi Jiaolin <input type="radio"/> Xu Xiaofeng <input type="radio"/> Zeng Weizhen <input type="radio"/> Zheng Guohuo		
Language	Chinese		
Nature of The Curriculum	Compulsory		
Teaching Methods	Teacher-Centered Method (Lecturing, Discussion)		
Workload	<p>Total hours 30 (1 credit = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 16 hours (1 credit * 16 hours, to be completed in 16 weeks, an average of 1 hour per week, including theory teaching, discussion, exercises, etc.).</p> <p>2. Self-study: 14 hours (1 credit * 14 hours, to be completed in 14 weeks, averaging 1 hour per week, including pre-class pre-study, post-class review, practice, homework, and test preparation).</p>		
ECTs Credits	1 Credit Point		
Recommended Prerequisites			
Learning Outcomes and Their Corresponding ILOs	Curriculum Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objective (ILOs)
	CLO-1	Students are expected to understand	R8, R10, R12

		the basic theories and foundational knowledge of analyzing and developing policies, including the scientific methods of analyzing and developing policies, the laws governing the development and the changes of situations, the origin and development of policies, and the essential characteristics of policies;	
	CLO-2	Students are expected to master the basic contents of the CPC's policies, and understand the series of policies formed since China's reform and opening up and the policy system that has been continuously improved in the process of building Chinese socialism.	R8, R10, R12
	CLO-3	Students are expected to enhance their abilities to correctly analyze and understand policies, especially on major events, sensitive issues, and social hotspots, difficulties, and points of contention both domestic and international.	R8, R10, R12
	CLO-4	Students are expected to perceive the national situations and public opinions, to experience the practice of the Party's line and policy, to unify the understanding of the situation and policy to the scientific judgment of CPC and China and the correct decision-making, and to establish a correct ideologies on life and values.	R8, R10, R12

<p>Contents</p>	<p>“Situation and Policy II” is one of the compulsory ideological and political theory courses for undergraduates in colleges and universities across China. Through the study of the course, college students are expected to correctly understand the domestic and international situation in the 21st century, deeply understand the historic achievements, historic changes, historic opportunities and challenges achieved by the party and the country’s undertakings since the 18th CPC National Congress. The course is an important teaching link to promote the theoretical innovation achievements of CPC into the textbooks, class and students’ minds in the first time, guide college students to accurately understand the CPC’s basic theory, basic line, and basic strategy. It is a theoretical and political course offered simultaneously with “Ideological and Moral Law and Governance” after the enrollment of undergraduates, which will lay a certain ideological and political foundation for subsequent courses such as “Chinese Revolutionary Culture”, “Outline of Modern and Contemporary Chinese History”, “General Introduction to Xi Jinping’s Thought on Socialism with Chinese Characteristics”, “Basic Principles of Marxism”, “General Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics”.</p> <p>The <i>Current Affairs Report (College Edition)</i> published by the Propaganda Department of the CPC Central Committee and Current Affairs Report Magazine is a special textbook for the “Situation and Policy” course in universities. It closely combines the <i>Teaching Points for the Situation and Policy Course in Colleges and Universities</i> issued by the General Office of the Ministry of Education. It profoundly expounds the basic theories and knowledge of situation and policy issues, as well as the basic content of the Party’s lines, principles, and policies. It can help students perceive national conditions, public opinion, and social development trends, stand firm in their positions, establish correct political and life views, and thus train themselves to become qualified successors to socialism.</p> <p>Topic 1: Strive for National Rejuvenation with Centennial Efforts and Forge Ahead with Courage and Perseverance to Promote Great Achievements</p> <p>Topic 2: Continuously Promote Common Prosperity for All People</p> <p>Topic 3: Foster New Advantages in the Digital Economy</p> <p>Topic 4: Overcome the Challenge of Achieving Carbon Peak and Carbon Neutrality</p> <p>Topic 5: Continuously Inherit Historical and Cultural Heritage and Compose a Glorious Chapter for the Contemporary Era</p>
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	<p>Topic 6: Stand on the Right Side of History and Jointly Create a Great Achievement for the Reunification of the Motherland</p> <p>Topic 7: The World Economy in Difficult Recovery</p>
Study and Examination Requirements and Forms of Examination	The final exam of this course is open-book, lasting 100 minutes. The final exam score accounts for 70% of the total score, while classroom assignments, extracurricular assignments, questions, discussions, etc. account for 30%.
Media Employed	Computer, Projector, Blackboard, PPT Courseware, Online Websites
Reading List/Reference	<p>(1) <i>Thirty Lectures on Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era</i>, Learning Publishing House, May 2018, ISBN 9787514708547.</p> <p>(2) <i>Xi Jinping: The Governance of China Volume I</i>, published by the Central Propaganda Department, the Central Documentation Research Department, and the China Foreign Languages Publishing Administration, Foreign Languages Press, September 2014, ISBN 9787119113920.</p> <p>(3) <i>Xi Jinping: The Governance of China Volume II</i>, published by the Central Propaganda Department, the Central Documentation Research Department, and the China Foreign Languages Publishing Administration, Foreign Languages Press, November 2017, ISBN 9787119111612.</p> <p>(4) <i>Xi Jinping: The Governance of China Volume III</i>, published by the Central Propaganda Department, the Central Documentation Research Department, and the China Foreign Languages Publishing Administration, Foreign Languages Press, June 2020, ISBN 9787119124094.</p> <p>(5) <i>Selected Letters of Xi Jinping Volume I</i>, published by the Central Propaganda Department, the Central Documentation Research Department, and the Central Documentation Publishing House, February 2022, ISBN 9787511554246.</p>

5. Ideology, Morality, and Rule of Law

Ideology, Morality, and Rule of Law

Curriculum Name	Ideology, Morality, and Rule of Law		
Curriculum Level	Undergraduate Level		
Curriculum Code	04A21003		
Affiliated Modules	Self-Improvement Module		
School Term	1st Term		
Contact Person	Yuan Jiao		
Lecturers	<input type="radio"/> Wang Tao, <input checked="" type="radio"/> ★Yuan Jiao, <input type="radio"/> ★Yu Laide, <input type="radio"/> Yuan Xi, <input type="radio"/> ★Guo Wangshu, <input type="radio"/> Sheng Xiting, <input type="radio"/> Wang Xueli, Cao Ling, ★Yang Yanning, ★Li Min, ★Chen Yanhong, ★Kong Yan		
Language	Chinese		
Nature of The Curriculum	Compulsory		
Teaching Methods	Teacher-Centered Method (Lecturing, Discussion)		
Workload	<p>50 hours total (1 credit hour = 1 hour, 1 ECTs = 25 hours)</p> <p>1. Lecture: 48 hours (2 credits*16 hours, to be completed in 16 weeks, with an average of 3 hours per week, including theoretical teaching, discussions, exercises, etc.).</p> <p>2. Self-study: 2 credit hours (2 credits * 1 credit hour, to be completed in 17 weeks, averaging 2 credit hours per week, including pre-class pre-study, post-class review, practice, homework, and test preparation).</p>		
ECTs Credits	2 Credit Points		
Recommended Prerequisites	Entrance Education, Military Theory		
Learning Outcomes and Their Corresponding ILOs	Curriculum Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objective (ILOs)

CLO-1	Students are expected to inherit and carry forward the traditional virtues of Chinese culture, strengthen their moral cultivation, abide by moral norms, cultivate noble moral character, consciously establish a correct world view, life view, values, moral view, and legal view, and actively practice the core socialist values.	R8
CLO-2	Students are expected to learn legal knowledge, enhance the concept of the rule of law, improve legal awareness, uphold the authority of law, and learn to use legal weapons to safeguard their legitimate rights and interests.	R6, R8
CLO-3	Students are expected to put what they have learned into practice, integrate theory with practice, use Marxist positions, perspectives, and methods to analyze and solve practical problems encountered in the process of growth and talent cultivation, and have strong social practice ability and academic creativity.	R9, R10
CLO-4	Students are expected to possess the ability to continuously acquire knowledge, develop their own potential, self-consciously and actively learn, and adapt to changes in relevant positions, able to be dedicated to their work and achieve sustainable personal development.	R8, R12

	CLO-5	Students are expected to have the awareness and ability for lifelong learning, be able to continuously learn and update knowledge, constantly absorb cutting-edge research results in the field, and enhance the spirit and ability of innovation.	R12
Contents	<p>“Ideology, Morality, and Rule of Law” is a compulsory ideological and political theory course for undergraduate students in Chinese universities. This course focuses on the ideological, moral, and legal issues faced by college students in their growth process, carrying out Marxist education on life view, values, moral view, and the rule of law. It aims to help college students improve their ideological and moral quality and legal literacy, and grow into new-era talents who consciously shoulder the great task of national rejuvenation. Learning this course will help college students understand the true meaning of life, grasp the direction of life, pursue lofty ideals, firm noble beliefs, inherit excellent traditions, promote the Chinese spirit, and widely practice the core socialist values. It will also help them abide by moral norms, temper moral character, closely combine correct moral cognition, self-conscious moral cultivation, and active moral practice, leading to good social trends. Additionally, it will assist them in learning the idea of the rule of law, cultivating legal thinking, and consciously respecting, learning, abiding by, and applying the law, thus developing excellent ideological and moral qualities and legal literacy.</p> <p>Topic 1: Undertaking the Great Task of Rejuvenation and Leaving a Legacy for a New Generation</p> <p>Topic 2: Grasping the True Meaning of Life and Navigating Life's Direction</p> <p>Topic 3: Pursuing High Ideals and Firming Noble Beliefs</p> <p>Topic 4: Inheriting Excellent Traditions and Promoting the Chinese Spirit</p>		

	<p>Topic 5: Clarifying Value Requirements and Practicing Value Norms</p> <p>Topic 6: Abiding by Ethical Norms and Tempering Moral Character</p> <p>Topic 7: Learning Legal Thinking and Enhancing Legal Literacy</p>
Study and Examination Requirements and Forms of Examination	The final exam of this course is a closed-book exam lasting 120 minutes. The final grade of this course consists of the final exam and process assessment. Among them, the final exam score accounts for 60% of the total grade, the daily performance (including attendance, discussion, etc.) in process assessment accounts for 24%, and homework and practical training account for 16%. Students must obtain a final score of more than 60 points to pass the course.
Media Employed	Computer, Projector, Blackboard, PPT Courseware, Video Resources
Reading List/Reference	<ol style="list-style-type: none"> 1. <i>Xi Jinping: The Governance of China, Volume III</i>, Foreign Languages Press, 2020 Edition. 2. <i>Xi Jinping: The Governance of China, Volume IV</i>, Foreign Languages Press, 2022 Edition. 3. <i>Xi Jinping: Holding High the Great Banner of Socialism with Chinese Characteristics and Striving in Solidarity for the Full Construction of a Modern Socialist Country - Report at the 20th National Congress of the Communist Party of China</i>, People's Publishing House, 2022 Edition. 4. <i>Xi Jinping: Ideological and Political Courses Are the Key to Implementing the Fundamental Task of Cultivating Morality and Cultivating Talents</i>, Qiushi Journal, Issue 17, 2020. 5. <i>Major Achievements and Historical Experience of the Party over the Past Century</i>, People's Publishing House, 2021 Edition. 6. <i>Medium and Long-term Youth Development Plan (2016-2025)</i>, People's Publishing House, 2017 Edition. 7. <i>Xi Jinping: Speech at the Conference of All Circles in the Capital to Commemorate the 30th Anniversary of the Promulgation and Implementation of the Current Constitution</i>, People's Publishing House, 2012 Edition.

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| | <p>8. <i>Xi Jinping: On Upholding the People as the Masters of the Country</i>, Central Literature Publishing House, 2021 Edition.</p> <p>9. The Information Office of the State Council of the People’s Republic of China: <i>National Human Rights Action Plan (2021-2025)</i>, People’s Publishing House, 2021 Edition.</p> <p>10. The Information Office of the State Council of the People’s Republic of China: <i>Democracy in China</i>, People’s Publishing House, 2021 Edition.</p> <p>11. The “Constitution of the People’s Republic of China” Writing Team: <i>Constitution of the People’s Republic of China (Second Edition)</i>, Higher Education Press, People’s Publishing House, 2021 Edition.</p> |
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6 Outline of Chinese Modern History

Outline of Chinese Modern History

Curriculum Name	Outline of Chinese Modern History		
Curriculum Level	Undergraduate Level		
Curriculum Code	04A21004		
Module	Self-Improvement Module		
Semester	2nd Semester		
Person Responsible for the Curriculum	Yang Min		
Lecturers	○ Wan Renlong, ○ Zhang Xiannv, ○ Zeng Weizhen, ○ Xv Aiqin; ★Su Li, ★Yang Min, ★Wan Renlong, ★Zhao Jinxin, ★Zhao Haiyan, ★Zeng Weizhen		
Language	Chinese		
Relation to Curriculum	Compulsory		
Teaching Methods	Teacher-Centered Methods (Lecture and Discussion)		
Workload	78 Total Hours ((1 Credit = 1 Hour, 1 ECTS = 26 hours)) 1. Lecture: 48 hours (3 credits * 16 hours to be completed in 16 weeks, an average of 3 hours per week, including theory teaching, discussions, exercises, etc.). 2. Self-Study: 30 hours (3 credits * 10 hours to be completed in 15 weeks, an average of 2 hours per week, including pre-class prep, post-class review, practice, homework, test preparation).		
ECTS Credits	3 Credit Points		
Recommended Prerequisites	Situation and Policy I, Ideology, Morality, and Rule of Law		
Learning Outcomes and Their Corresponding ILOs	Course Learning Outcomes (CLO)	Descriptions	Supported Intended Learning Objectives (ILOs)

	CLO-1	Students are nurtured to possess a firm belief in the ideals of socialism with Chinese characteristics to uphold the Four Cardinal Principles, and to support for guidelines, principles and policies of the Communist Party of China (CPC).	R11,R12
	CLO-2	Through this course, students will establish a scientific worldview, outlook on life and values, and will possess a strong sense of social responsibility, and practice core socialist values.	R8,R12
	CLO-3	This course helps students master the Marxist position, viewpoints and methods on the correct analysis of social and ideological problems, and to have strong practical ability, the ability to analyze and solve problems, and the ability to acquire knowledge.	R8,R12
Contents	<p>The course “Outline of Chinese Modern History” is a compulsory course of ideological and political theory for undergraduates. This course will help students to understand the historical process of social development and revolution, construction and reform in modern China and its inherent laws. In this course, students will learn how history and the people have chosen Marxism, the CPC, the socialist road, and reform and opening up. In addition, students will understand that, at the fundamental level, we owe the success of our Party and socialism with Chinese characteristics to the fact that Marxism works, particularly when it is adapted to the Chinese context and the needs of our times. This course aims to cultivate students’ ability to analyze and solve problems by consciously applying the standpoints, viewpoints and methods of Marxism, and to help them establish confidence in the road, theory, system and culture of socialism with Chinese characteristics.</p> <p>Topic 1: Why Contemporary University Students Need to Learn the Outline of</p>		

	<p>Modern Chinese History</p> <p>Topic 2: Why National Rejuvenation Has Become the Greatest Dream of the Chinese Nation in Modern Times</p> <p>Topic 3: Why Many Plans for Saving the Country of Different Social Classes and Social Forces Failed in Modern China</p> <p>Topic 4: Why the Solution of the Bourgeois Republic doesn't Work in China</p> <p>Topic 5: Why the Chinese Progressives Chose Marxism</p> <p>Topic 6: Why the Founding of the Communist Party of China (CPC) Was an Epochal Event in China's history</p> <p>Topic 7: Why the Chinese Revolution Had to Forged a New Path</p> <p>Topic 8: Why the Victory in the War of Resistance against Japanese Aggression was a Historical Turning Point for the Great Rejuvenation of the Chinese Nation</p> <p>Topic 9: Why There Would Be no New China without the CPC</p> <p>Topic 10: Why History and the Chinese People Chose socialism</p> <p>Topic 11: Why History and the Chinese People Chose Reform and Opening Up</p> <p>Topic 12: How to Understand Socialism with Chinese Characteristics Entering a New Era</p> <p>Topic 13: The Great Rejuvenation of the Chinese Nation Has Entered an Irreversible Historical Process</p>
<p>Study and Examination Requirements and Forms of Examination</p>	<p>The final exam for the course is a closed-book, 120-minute exam. The final grade of the course consists of the final examination and the process assessment. The final exam is 70% of the grade, the process assessment is 21% for regular performance (including attendance, discussion, etc.) and 9% for assignments. Students must earn a final grade of 60 or above to pass the course.</p>
<p>Media Employed</p>	<p>computers, projectors, blackboards, PowerPoint courseware, video resources</p>

<p>Reading List</p>	<ol style="list-style-type: none"> 1. <i>Selected Works of Mao Tsetung</i>, People’s Publishing House, 1991. 2. <i>Selected Works of Deng Xiaoping</i>, People’s Publishing House, 1994. 3. <i>Xi Jinping on the Governance of China</i>, Volume III, Foreign Languages Press, 2020. 4. <i>Xi Jinping on the Governance of China</i>, Volume IV, Foreign Languages Press, 2022. 5. Xi Jinping, “Speech at a Ceremony Marking the Centenary of the Communist Party of China”, People’s Publishing House, 2022. 6. <i>Resolution on the Major Achievements and Historical Experience of the Party over the Past Century</i>, People’s Publishing House, 2021. 7. Xi Jinping, “Hold High the Great Banner of Socialism with Chinese Characteristics and Strive in Unity to Build a Modern Socialist Country in All Respects—Report to the 20th National Congress of the Communist Party of China”, People’s Publishing House, 2022.
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7 Basic Principles of Marxism

Basic Principles of Marxism

Curriculum Name	Basic Principles of Marxism		
Curriculum Level	Undergraduate level		
Curriculum Code	04A21005		
Module	Self-Improvement module		
Semester	4th Semester		
Person Responsible for the Curriculum	Bai Wei		
Lecturers	○ Bai Wei ○ Yu Laide ○ Zhang Peng ○ Zhao Jinxin ○ Yu Tanming ★Chen Caiyun ★Lai Jianchun ★Guo Hongyun ★Gao Cao ★Xv Xiaofeng		
Teaching Language	Chinese		
Relation to Curriculum	Compulsory		
Teaching Methods	Teacher-Centered Methods (Lecturing, Questioning, Argumentation, etc.); Interactive Methods (Class Discussion, Group Discussion, etc.);		
Workload	90 Total Hours (1 Credit = 1 Hour, 1 ECTS = 30 hours) 1. Lecture: 48 Hours (3 credits * 16 hours, to be completed in 16 weeks, with an average of 3 hours per week, including theoretical teaching, practical teaching, discussions, etc.). 2. Self-Study: 42 Hours (3 credits * 14 hours, to be completed in 14 weeks, averaging 3 credit hours per week, including pre-testing, exercises, homework assignments, review and preparation for exams, etc.).		
ECTs Credits	3 Credit Points		
Recommended Prerequisites	Ideology, Morality, and Rule of Law, Situation and Policy I, Outline of Chinese Modern History, Overview of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era		
Learning Outcomes	Course Learning	Descriptions	Supported

and Their Corresponding ILOs	Outcomes (CLOs)		Intended Learning Objectives (ILOs)
	CLO-1	Through this course, students can possess scientific and humane qualities, social responsibility and professional ethics, and be able to understand and follow the code of ethics of the engineering profession and fulfil responsibilities in engineering practice.	R8
	CLO-2	This course helps students to have good professionalism, humanistic qualities and teamwork spirit, as well as the ability to manage the relationship between the individual and the team and to take on the role of individual, team member or leader in a team in a multidisciplinary context.	R9
	CLO-3	This course helps students to be able to communicate and interact effectively with industry peers and the public on complex professional issues, including writing reports and design scripts, presenting speeches, and articulating or responding to instructions. It also develops an international perspective that enables students to build a certain level of competence in communicating and interacting in a cross-cultural context.	R10,R11
	CLO-4	This course enables students to correctly understand the importance of independent and lifelong learning, have the awareness and habit of	R11,R12

	independent and lifelong learning, and to have the ability to continuously learn and adapt to career development.	
Contents	<p>Basic Principles of Marxism is a compulsory ideological and political theory course for undergraduates in higher education institutions nationwide. The course focuses closely on the worldview and methodology of Marxism, and systematically introduces the basic theories of Marxist philosophy, political economy and scientific socialism. The course aims to comprehensively and accurately explain the basic principles of Marxism, to help students understand and gain a good command of Marxism, as well as to correctly understand the basic laws of the development of human society, so as to help them establish a correct worldview, outlook on life and values, and to improve their ability to analyze and solve practical problems by applying the Marxist standpoints, viewpoints and methods. In addition, the course will lay a solid theoretical foundation for students to establish their faith in Marxism, their belief in the common ideal of socialism with Chinese characteristics, and their conscious adherence to the Party's basic theory, guideline and policy.</p> <p>Topic 1: Marxist View</p> <p>Topic 2: Dialectical Materialist Worldview</p> <p>Topic 3: Dialectical Materialist Epistemology</p> <p>Topic 4: Materialistic View of History</p> <p>Topic 5: Theory of Capitalism (1)</p> <p>Topic 6: Theory of Capitalism (2)</p> <p>Topic 7: Theory of Socialism</p> <p>Topic 8: Theory of Communism</p>	
Study and Examination Requirements and	<p>The final examination for the course is a closed-book, 120-minute examination. The final grade of the course is based on the final exam grade and the process assessment. The final grade constitutes 60% of the total assessment, while the process</p>	

forms of Examination	assessment, including regular performance (including attendance, discussion, etc.) and assignments and practice (including in-class and out-of-class), accounts for 24% and 16% respectively. Students will only pass if they receive a final grade of at least 60 points.
Media Employed	computers, projectors, blackboards, PowerPoint courseware, online websites
Reading List	<ol style="list-style-type: none"> 1. <i>Basic Principles of Marxism</i>, writing group of <i>Basic Principles of Marxism</i>, Higher Education Press, 2023, ISBN 9787040599008. 2. <i>Teaching Reference Book of “Basic Principles of Marxism”</i>, Feng Jinjv and Hao Lixin, Higher Education Press, 2016, ISBN 9787040456042. 3. <i>Speech at the conference to celebrate the 100th anniversary of the founding of the Communist Party of China</i>, Xi Jinping, People’s Publishing House, 2021, ISBN9787010235615. 4. <i>Speech at the Congress Commemorating the 200th Anniversary of the Birth of Karl Marx</i>, Xi Jinping, People’s Publishing House, May 2018, ISBN: 9787010193656. 5. <i>Illustrated Spirit of the Fifth Plenary Session of the Nineteenth Central Committee</i> writing group of <i>Illustrated Spirit of the Fifth Plenary Session of the Nineteenth Central Committee</i>, People’s Publishing House, 2020, ISBN 9787010226699. 6. <i>Xi Jinping on the Governance of China (Vol.4)</i>, Central Propaganda Department, Central Documentation Research Office & Chinese Foreign Language Bureau, Foreign Languages Press, June, 2022, ISBN 9787119130927. 7. Guidebook to the 20th Party Congress Report (eBook), WWW.12371.cn 8. <i>The Communist Manifesto, Selected Works of Karl Marx and Friedrich Engels</i>, Karl Marx and Friedrich Engels, People’s Publishing House, 2012.

8 Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics

Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics

Curriculum Name	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics
Curriculum Level	Undergraduates Level
Curriculum Code	04A21006
Module	Self-Improvement module
Semester	4th Semester
Person Responsible for the Curriculum	Yao Lisheng
Lecturers	Lai Jianchun, Yang Yanning
Teaching Language	Chinese
Relation to Curriculum	Compulsory
Teaching Methods	Teacher-Centered Methods (Lecture)
Workload	<p>90 Total Hours (1 Credit = 1 Hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 48 Hours (3 credits * 16 hours, to be completed in 16 weeks, with an average of 3 hours per week, including theoretical teaching, practical teaching, discussions, etc.).</p> <p>2. Self-Study: 42 Hours (3 credits * 14 hours, to be completed in 14 weeks, averaging 3 credit hours per week, including pre-testing, exercises, homework assignments, review and preparation for exams, etc.).</p>
ECTs Credits	3 Credit Points
Recommended Prerequisites	Ideology, Morality, and Rule of Law, Outline of Chinese Modern History

	Course Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objectives (ILOs)
Learning Outcomes and Their Corresponding ILOs	CLO-1	<p>This course provides students with a deep understanding of the contemporary, theoretical, and world significance of the theoretical achievements of adapting Marxism to the Chinese context. The course promotes students' comprehensive understanding of the connotation, theory and system, the essence and practical requirements of the theoretical achievements of adapting Marxism to the Chinese context, as well as to deeply understand that Marxism is constantly developing in China.</p>	R6
	CLO-2	<p>This course guides students to learn to master the ideas behind the theories, the strategies contained in the ideas, and the wisdom contained in the strategies, so as to gain enlightenment. It also guides them to read and study the classic works, in particular, to read the original text and the original text, and thus they can understand the principles. Through learning with thinking and questions, students will be able to think, comprehend and gain something useful after learning, so that they can continuously improve their ideological and theoretical level and ability to analyze and solve</p>	R7,R11

		problems.	
	CLO-3	<p>Through this course, students will gain an in-depth understanding of the history of the history of the CPC, the history of the People's Republic of China, the history of reform and opening up, the history of socialist development and the history of the development of the Chinese nation, and will go on to practice the great struggles, the great projects, the great undertakings, and the great dreams. And the course also guides students to take into account the actual construction of a modernized socialist country in all respects and their own thoughts, and to integrate theory and practice, ideal and reality, subjectivity and objectivity, and knowledge and action, so as to consciously devote themselves to the great practice of socialism with Chinese characteristics, and to make their due contribution to the realization of the great rejuvenation of the Chinese nation.</p>	R8,R11
Contents	<p>The course "Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics" is a core course in the general education curriculum of ideological and political theory that is compulsory for undergraduates in higher education institutions nationwide. The study of "Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics" is an inevitable requirement for cultivating young college students to become a new man of the times who can take up the great responsibility of national rejuvenation. "Introduction to Mao Zedong Thought and the Theoretical System of Socialism with</p>		

	<p>Chinese Characteristics” is based on adapting Marxism to the Chinese context and the needs of the times on the new journey, and fully reflects the historical process and basic experience of the Communist Party of China (CPC) in promoting the combination of the basic principles of Marxism with the actual situation in China, and combining them with the excellent traditional Chinese culture, and concentrates on the process of the formation of the theoretical achievements of adapting Marxism to the Chinese context, its main contents, and its essence, historical status and guiding significance.</p> <p>This course is designed, first and foremost, to help contemporary college students systematically grasp the main content and scientific system of Mao Zedong Thought and the theoretical system of socialism with Chinese characteristics. Secondly, it can help students fully grasp the historical process and basic experience of the modernization of Marxism, and deeply understand the theoretical, historical and practical logic of Mao Zedong Thought and the theory of socialism with Chinese characteristics. As a result, they can enhance their political, theoretical, ideological, emotional and political, ideological, theoretical, and emotional recognition of Mao Zedong Thought and theory and system of socialism with Chinese characteristics, and grasp the position and viewpoints and methods therein, so that students can align their study with thinking and practice, and turn what they have learned into conviction and action.</p> <p style="text-align: center;">Introcution</p> <p>Chapter I Mao Zedong Thought and Its Historical Position</p> <p>Chapter II Theory of New Democratic Revolution</p> <p>Chapter III Theory of Socialist Transformation</p> <p>Chapter IV Theoretical Achievements of the Initial Exploration of the Path of Socialist Construction</p> <p>Chapter V The Formation and Development of the Theoretical System of Socialism with Chinese Characteristics</p> <p>Chapter VI Deng Xiaoping Theory</p> <p>Chapter VII The Important Thought of “Three Represents”</p> <p>Chapter VIII The Scientific Outlook on Development</p> <p style="text-align: center;">Conclusion</p>
<p>Study and Examination Requirements and Forms of</p>	<p>The final exam for the course is closed-book and lasts 120 minutes. The final grade of the course consists of 60% of the final exam grade, and 40% of the other components including in-class assignments, out-of-class assignments, questions, and discussions.</p>

Examination	
Media Employed	computers, projectors, blackboards, PowerPoint courseware
Reading List	<p>1. <i>Xi Jinping on the Governance of China (Vol.1)</i>, Central Propaganda Department & Central Documentation Research Office & Chinese Foreign Language Bureau, Foreign Languages Press, September, 2014, ISBN 9787119113920.</p> <p>2. <i>Xi Jinping on the Governance of China (Vol.2)</i>, Central Propaganda Department & Central Documentation Research Office & Chinese Foreign Language Bureau, Foreign Languages Press, November, 2017, ISBN 9787119111612.</p> <p>3. <i>Xi Jinping on the Governance of China (Vol.3)</i>, Central Propaganda Department & Central Documentation Research Office & Chinese Foreign Language Bureau, Foreign Languages Press, July, 2020, ISBN 9787119124094.</p> <p>4. <i>Xi Jinping on the Governance of China (Vol.4)</i>, Central Propaganda Department, Central Documentation Research Office & Chinese Foreign Language Bureau, Foreign Languages Press, June, 2022, ISBN 9787119130927.</p> <p>5. <i>Hold High the Great Banner of Socialism with Chinese Characteristics and Strive in Unity to Build a Modern Socialist Country in All Respects—Report to the 20th National Congress of the Communist Party of China</i>, People’s Publishing House, October, 2022, ISBN 9787010251493.</p> <p>6. <i>Review of the spirit of General Secretary Xi Jinping’s important speech at the conference to celebrate the 100th anniversary of the founding of the Communist Party of China</i>, Xinhua News Agency & Xinhua Publishing House, October, 2021, ISBN 9787516661079.</p> <p>7. <i>A Brief History of the Communist Party of China</i>, History of the Communist Party of China Writing Group, CPC History Press, February, 2021, ISBN 9787010232034.</p>

9 Overview of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era

Characteristics for a New Era

Overview of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era

Curriculum Name	Overview of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era
Curriculum Level	Undergraduate level
Curriculum Code	04A21086
Module	Self-improvement module
Semester	3rd Semester
Person Responsible for the Curriculum	Fang Weixing
Lecturers	○Zhang Peng ○Xv Renzhong ○Bai Wei ○Huang Yusha ○Wang Tao ☆Chen Yanhong ☆Hu Weiwei ☆Guo Wangshu ☆Xv Xiaofeng ☆Yu Tanming
Teaching Language	Chinese
Relation to Curriculum	Compulsory
Teaching Methods	Teacher-Centered Methods (Lecture)
Workload	90 Total Hours ((1 Credit = 1 Hour, 1 ECTS = 30 hours) 1. Lecture: 48 Hours (3 credits * 16 hours, to be completed in 16 weeks, with an average of 3 hours per week, including theoretical teaching, practical teaching, discussions, etc.). 2. Self-Study: 42 Hours (3 credits * 14 hours, to be completed in 14 weeks, averaging 3 credit hours per week, including pre-testing, exercises, homework assignments, review and preparation for exams, etc.).
ECTs Credits	3 Credit Points
Recommended Prerequisites	Ideology, Morality, and Rule of Law, Outline of Chinese Modern History

	Course Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objectives (ILOs)
Learning Outcomes and Their Corresponding ILOs	CLO -1	This course focuses on the study of basic theories. Through this course, students will be able to grasp the core essence, spiritual essence, rich connotation, and practical requirements of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era.	R6
	CLO -2	Students can grasp the basic position and viewpoints of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era on the basis of understanding theoretical knowledge, to improve their self-consciousness in learning theories and continuously expand their knowledge, and to enhance their ability to think independently, establish a historical viewpoint, a global perspective, a sense of national conditions and a sense of problems, and to enhance their ability to analyze and solve problems.	R7,R11
	CLO -3	This course can help students improve their political literacy and strengthen their ideal beliefs. Through learning, students can achieve firm ideals and beliefs, firm faith in Marxism, faith in socialism with Chinese characteristics, faith in realizing the Chinese dream of the	R8,R11

		<p>great rejuvenation of the Chinese nation, and unswervingly listen to the Party and follow the Party.</p> <p>This course also guides students to combine learning and application, to put their ambitious aspirations into practical action, to make diligent study the driving force of youth blooming in full splendor, to make the growth of skills the energy of forging ahead in youth, and finally to transform the results of learning into the great practice of socialism with Chinese characteristics.</p>	
<p>Contents</p>	<p>The course “Overview on Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era” is one of the compulsory ideological and political theory courses for undergraduates in higher education institutions nationwide. The study and implementation of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era is the fundamental political task of the whole party and the whole country, and it is also the inevitable requirement for the majority of young college students to become newcomers to the era of taking on the great responsibility of national rejuvenation. The textbook comprehensively and systematically explains the scientific theory and system, internal logic, and significant historical status of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, and comprehensively reflects the latest theoretical achievements in adapting Marxism to the Chinese context and the needs of our times.</p> <p>This course can help contemporary college students systematically grasp the main content and scientific system of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, as well as the worldview, methodology, and standpoints and methods of Xi Jinping Thought, to promote their political, ideological, theoretical, and emotional identification. And as a result, students can align their study with thinking and practice, and turn what they have learned into conviction and action.</p> <p>Introduction</p> <p>Chapter I Adherence to and Development of Socialism with Chinese Characteristics in</p>		

	<p>the New Era</p> <p>Chapter II Comprehensively Promoting the Great Revival of the Chinese Nation through Chinese-Style Modernization</p> <p>Chapter III Adherence to the Overall Leadership of the CPC</p> <p>Chapter IV Adherence to People-centered Philosophy</p> <p>Chapter V Deepening Reform and Opening Up</p> <p>Chapter VI Promoting High-Quality Development</p> <p>Chapter VII Education, Science and Technology, and Talent Strategy for Socialist Modernization Construction</p> <p>Chapter VIII Developing Whole-Process People’s Democracy</p> <p>Chapter IX Law-based Governance in all Fields</p> <p>Chapter X Developing China into a Socialist Country with Strong Culture</p> <p>Chapter XI Accelerating Social Development with a Focus on Improving Public Wellbeing</p> <p>Chapter XII Building a Socialist Ecological Civilization</p> <p>Chapter XIII Safeguarding and Shaping National Security</p> <p>Chapter XIV Strengthening National Defense and the Armed Forces</p> <p>Chapter XV Upholding the “One Country, Two Systems” Policy and Promoting National Reunification</p> <p>Chapter XVI Promoting Major-Country Diplomacy with Chinese Characteristics and the Building of a Global Community of Shared Future</p> <p>Chapter XVII Strengthening Party Self-Governance in Every Respect</p>
<p>Study and Examination Requirements and Forms of Examination</p>	<p>The final exam for the course is closed-book and lasts 120 minutes. The final grade of the course consists of 60% of the final exam grade, and 40% of the other components including in-class assignments, out-of-class assignments, questions, and discussions.</p>
<p>Media Employed</p>	<p>computers, projectors, blackboards, PowerPoint courseware</p>

Reading List	<ol style="list-style-type: none"> 1. <i>Xi Jinping on the Governance of China (Vol.1)</i>, Central Propaganda Department & Central Documentation Research Office & Chinese Foreign Language Bureau, Foreign Languages Press, September, 2014, ISBN 9787119113920. 2. <i>Xi Jinping on the Governance of China (Vol.2)</i>, Central Propaganda Department & Central Documentation Research Office & Chinese Foreign Language Bureau, Foreign Languages Press, November, 2017, ISBN 9787119111612. 3. <i>Xi Jinping on the Governance of China (Vol.3)</i>, Central Propaganda Department & Central Documentation Research Office & Chinese Foreign Language Bureau, Foreign Languages Press, July, 2020, ISBN 9787119124094. 4. <i>Xi Jinping on the Governance of China (Vol.4)</i>, Central Propaganda Department, Central Documentation Research Office & Chinese Foreign Language Bureau, Foreign Languages Press, June, 2022, ISBN 9787119130927. 5. <i>Selected Works of Xi Jinping (Vol.1)</i>, the Party Literature Editing Committee under the Communist Party of China (CPC) Central Committee, People’s Publishing House, April, 2023, ISBN 9787010255507. 6. <i>Selected Works of Xi Jinping (Vol.2)</i>, the Party Literature Editing Committee under the Communist Party of China (CPC) Central Committee, People’s Publishing House, April, 2023, ISBN 9787010255569. 7. <i>Hold High the Great Banner of Socialism with Chinese Characteristics and Strive in Unity to Build a Modern Socialist Country in All Respects—Report to the 20th National Congress of the Communist Party of China</i>, People’s Publishing House, October, 2022, ISBN 9787010251493. 8. <i>Review of the spirit of General Secretary Xi Jinping’s important speech at the conference to celebrate the 100th anniversary of the founding of the Communist Party of China</i>, Xinhua News Agency & Xinhua Publishing House, October, 2021, ISBN 9787516661079. 9. <i>A Brief History of the Communist Party of China</i>, History of the Communist Party of China Writing Group, CPC History Press, February, 2021, ISBN 9787010232034.
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10 Great Youth Learning and Moral Education Defence

Great Youth Learning and Moral Education Defence

Curriculum Name	Great Youth Learning and Moral Education Defence		
Curriculum Level	Undergraduate Level		
Curriculum Code	13A21007		
Affiliated Modules	Self-improvement Module		
Semester	8 th Semester		
Contact Person	Jiang Yuanyuan		
Lecturers	Li Shilong, Li Shuyao, Liu Xiaoyan		
Language	Chinese		
Nature of the Curriculum	Compulsory Course		
Teaching Methods	Teacher-centred Approach (questioning); Individualized Approach (computer-based instruction)		
Workload	<p>30 Hours in Total (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 16 credit hours (1 credit * 16 credit hours, to be completed in 16 weeks, averaging 1 credit hour per week, including discussions and examinations).</p> <p>2. Self-study: 14 credit hours (1 credit * 14 credit hours, to be completed in 14 weeks, averaging 1 credit hour per week, including online courses, assignments, and review and preparation for exams).</p>		
ECTs Credits	1 Credit		
Prerequisite Curricula	—		
Learning Outcomes and Their Corresponding ILOs	Programme Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objective (ILOs)
	CLO-1	To master and understand Xi Jinping's thought on socialism with Chinese characteristics, the	R8

		<p>background of the formation of Xi Jinping's thought on socialism with Chinese characteristics, and the main content of Xi Jinping's thought on socialism with Chinese characteristics. To strengthen the "Four Awareness", establish the "Four Confidence", and unswervingly listen to the Party and follow the Party.</p>	
	<p>CLO-2</p>	<p>Comprehensively analyse the self-growth track during the university period, systematically summarize the practice of moral education during the university period, enhance graduates' introspection of their own ideology and morality and self-discipline, deepen graduates' ideological and political education, and help graduates to smoothly enter into the society and embark on a new journey of life.</p>	<p>R10, R11, R12</p>
<p>Contents</p>	<p>The Great Youth Learning and Moral Education Defence is a compulsory course for the second classroom, and the online thematic group class of Great Youth Learning is held once a week, and the online thematic group class of Great Youth Learning is a new model for strengthening youth ideological and political education in a "process-oriented" manner. The class is a new mode of strengthening the ideological and political education of young people, which is launched two series a year, 16 times a series, one time per week, including thematic collection of the original speech, interpretation of the video, knowledge tests and extended reading and other learning content. Moral education defence is a "result-oriented" evaluation of the results of students' moral education during the university period, and is a compulsory course in the last semester of school, guiding graduates to comprehensively analyse their self-growth trajectory during the university period, systematically summarizing the practice of moral education during the university period, enhancing graduates'</p>		

	<p>introspection of their own ideology and morality and self-discipline of their own behaviors, deepening their ideological and political education, and helping graduates to smoothly enter the world of work and to develop a better future. It also deepens the ideological and political education of the graduates and helps them to enter the society smoothly and embark on a new journey of life.</p> <p>Chapter I Great Youth Learning</p> <p>Chapter II Moral Education Defence</p>
<p>Study and Examination Requirements and Forms of Examination</p>	<p>The final exam for the course is a major assignment of 120 minutes, and the final grade in the curriculum is composed of final exam 60% and take-home assignments 40%.</p>
<p>Media Employed</p>	<p>Computers, Online Sites</p>
<p>Reading List/Reference</p>	<p>Online Theme Group Classes on Great Youth Learning</p>

11 Red Culture

Red Culture

Curriculum Name	Red Culture		
Curriculum Level	Undergraduate Level		
Curriculum Code	04A21009		
Affiliated Modules	Self-improvement Module		
Semester	6 th Semester		
Contact Person	Zheng Guohuo		
Lecturers	Zheng Guohuo, Yao Lisheng, Zhou Yanhua, Xu Renzhong, Han Cong, Xiong Yan, Zhai Wenxuan		
Language	Chinese		
Nature of the Curriculum	Compulsory Course		
Teaching Methods	Teacher-centred Methods (lecturing, questioning, argumentation)		
Workload	<p>30 Hours in Total (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 16 hours (1 credit * 16 hours, completed in 16 weeks, an average of 1 credit hour per week, including theoretical teaching, discussion and examination).</p> <p>2. Self-study: 14 credit hours (1 credit * 14 credit hours, to be completed in 14 weeks, an average of 1 credit hour per week, including online courses <i>Study Pass</i>, exercises, assignments, and review for exam preparation).</p>		
ECTs Credits	1 credit		
Prerequisite Curricula	<i>Situation and Policy I, Ethics and the Rule of Law</i>		
Learning Outcomes and Their Corresponding ILOs	Curriculum Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objective (ILOs)

	CLO-1	Understanding the unique status and ideological and cultural value of red history, students are expected to establish a correct world view, outlook on life and values, and integrate the socialist core values into the whole process of their growth and success;	R6, R11
	CLO-2	Students are expected to be able to inherit and carry forward the essence of red culture such as the spirit of Jing Gangshan, the spirit of the Long March, the spirit of Yan'an and the spirit of Xi Baipo, which was formed by the Communist Party of China in the course of its leadership of the Chinese Revolution, and to forge ahead and be determined to do so;	R6, R7
	CLO-3	In the study of red culture to strengthen their own cultivation, students are expected to forge the heart of the red, and in the future study, work and life can learn and apply the red culture, and then constantly thick plant cultural heritage, inherit the red gene, play a good Chinese base, for the realization of the great rejuvenation of the Chinese nation's Chinese dream to dedicate their own youthful strength.	R8, R12

<p>Contents</p>	<p>Red Culture is a comprehensive quality education course, which is based on the textbook Red Culture Ten Lectures edited by Qiu Xiaoyun from Jiangxi University Pres. It aims to answer the question “why inheritance and carry forward the red culture” and other 10 historical and practical questions, and lay a solid ideological foundation for students by using the study of the “beginning”, including Chinese workers movement, the cradle of the People's Army, the cradle of the Chinese Revolution, the cradle of the Republic of Jiangxi red history and culture, and by using the main line of research, including Chinese characteristics of the revolutionary road, Revolutionary culture, revolutionary spirit.</p> <p>Lecture 1: Why Should We Pass on and Carry forward the Red Culture</p> <p>Lecture 2: Why the History of the Chinese Revolution is the Best “Nutrient”</p> <p>Lecture 3: Why Surrounding Cities in the Countryside is the Road to Revolutionary Success</p> <p>Lecture 4: Why Marxism Comes Out of the Ravine</p> <p>Lecture 5: Why We Need to Build a Communist Ideal</p> <p>Lecture 6: Why the Red Chinese Regime Exists</p> <p>Lecture 7: Why the CPC Can Become a Strong Leading Nucleus for Great Causes</p> <p>Lecture 8: Why We Should Carry forward the Great Party Founding Spirit and the Spiritual Genealogy of the Chinese Communists</p> <p>Lecture 9: Why We Should Honour Revolutionary Heroes</p> <p>Lecture 10: Why the Red River Should Always be Passed on from Generation to Generation</p>
<p>Study and Examination Requirements and Forms of Examination</p>	<p>The final exam for the course is open-book, 100 minutes long, and the final grade in the curriculum is composed of final exam 70%, classroom assignments, take-home assignments, questions, and discussions 30%</p>
<p>Media Employed</p>	<p>Projector, blackboard, PPT courseware, online websites</p>

<p>Reading List/Reference</p>	<p>(1) <i>Red Culture of Jiangxi</i>, Shu Wake, Baihuazhou Literary Publishing House, 1st edition, 2019, ISBN 9787550034716.</p> <p>(2) <i>History of the Communist Party of China</i>, book writing team, People's Publishing House - CPC History Press, 1st edition, 2021, ISBN 978-7-01-023203-4.</p> <p>(3) <i>Red Jiangxi</i>, Yang Huiqing, Jiangxi Education Press, 1st edition, 2018, ISBN 978-7-5705-0010-9.</p> <p>(4) <i>Red Family Letters</i>, book writing team, Party Building Books Publishing House, 1st edition, 2016, ISBN 9787509907979.</p> <p>(5) <i>Red Beginnings - The Beginning and End of the Founding of the Communist Party of China</i>, Ye Yonglie, Sichuan People's Publishing House, 1st edition, 2015, ISBN 9787220092305.</p>
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12 National Security Education

National Security Education

Curriculum Name	National Security Education		
Curriculum Level	Undergraduate Level		
Curriculum Code	04A21010		
Affiliated Modules	Self-improvement Module		
Semester	4 th Semester		
Contact Person	Yuan Jiao		
Lecturers	○Yuan Xi, ○★Yuan Jiao, ○★Xu Hansheng, ○Zhan Chuyue, ○Xiao Shan, ★Cao Xiaoping, ★Zhu Fan, ★Wu Longfa		
Language	Chinese		
Nature of the Curriculum	Compulsory Course		
Teaching Methods	Teacher-centred Methods (lectures, discussions)		
Workload	<p>30 Hours in Total (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 16 hours (1 credit * 16 hours, completed in 16 weeks, an average of 1 credit hour per week, including theory teaching, discussion, exercises, etc.).</p> <p>2. Self-study: 14 hours (1 credit * 14 hours, completed in 14 weeks, an average of 1 credit hour per week, including preview, post-class review, exercises, homework, and exam preparation).</p>		
ECTs Credits	1 credit		
Prerequisite Curricula	Situation and Policy		
Learning Outcomes and Their Corresponding ILOs	Curriculum Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objective (ILOs)
	CLO-1	Identify with the overall concept of national security, develop a sense of	R12

	<p>political thinking of “thinking of danger in times of peace and prevention”, strive to be a high-quality person who is useful to the country and the society, enhance the sense of responsibility, obligation and sense of honour in safeguarding national security, strengthen the students’ ideals and beliefs, cultivate patriotism, and improve the overall quality of the students.</p>	
CLO-2	<p>Understand the importance of national security to the State and society, recognizing that safeguarding national security is the responsibility of every citizen, clarifying the security situation in China, grasp the content and scope of national security, and attach importance to national security laws and regulations.</p>	R8, R12
CLO-3	<p>Be able to analyse the complex domestic and international environment facing the country, to understand and appreciate national security in a comprehensive manner, to understand the significance of building an overall concept of national security, and to enhance the ability to protect personal information and guard against cyber-security risks.</p>	R8, R12

	CLO-4	Be a team player, develop a strong sense of the big picture and safety awareness, and be able to contribute in different roles to gain their own sustainable development;	R9
	CLO-5	Be able to develop an awareness of national security in their studies and work, to recognize the importance of their actions and statements to national security, and to be able to exercise their rights and obligations correctly.	R12
Contents	<p>National Security Education is a compulsory ideological and political theory course for undergraduates in colleges. Based on the <i>Guidelines for National Security Education in Universities, Middle Schools and Primary Schools</i>, and combined with the actuality and needs of national security education in ordinary colleges and universities, this textbook highlights authority, standardization and practicability while striving to be scientific and rigorous. The overall theoretical framework of this course is constructed on the basis of comprehensively summarizing and sorting out General Secretary Xi Jinping's important discourse on the Overall View of the State and its related important expositions. The course introduces political security, homeland security, military security, economic security, cultural security, social security, scientific and technological security, network security, ecological security, resource security, nuclear security, security of overseas interests, security in new fields, etc., and focuses on raising the awareness of college students of national security, improving their ability to safeguard national security, reinforcing the responsibility of college students, and building a firm national security defence line. National Security Defence. The course is divided into eight topics and 16 class hours. Through national security education and public security education, it improves the national security awareness and self-protection ability of college students in the new era, strengthens students' ideals and beliefs, cultivates patriotism, strengthens moral cultivation and improves students' comprehensive quality through subtle influence.</p>		

	<p>Topic I Overview of National Security</p> <p>Topic II Political and Cultural Security</p> <p>Topic III Homeland and Military Security</p> <p>Topic IV Economic and Social Security</p> <p>Topic V Science and Technology Security and Cybersecurity</p> <p>Topic VI Ecological and Resource Security</p> <p>Topic VII Biosecurity and Nuclear Security</p> <p>Topic VIII National Security in New Areas</p>
Study and Examination Requirements and Forms of Examination	The final examination for the course is a closed-book examination of 120 minutes duration. The final grade of the course is composed of the final examination and the process assessment, including the final exam grade 70%, usual performance (including attendance, discussion, etc.) 21% and assignments 9% . Students must obtain a final grade of 60 or above to pass the course.
Media Employed	Computer, projector, blackboard, PPT courseware, video resources
Reading List/Reference	<p>(1) Institute of Party History and Literature of the Central Committee of the Communist Party of China. <i>Excerpts from Xi Jinping's Discourses on the Overall National Security Concept</i> [G]. Central Literature Press, 2018.</p> <p>(2) Propaganda Department of the Central Committee of the Communist Party of China. <i>Thirty Lectures on Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era</i> [M]. Study Press, 2018.</p> <p>(3) <i>Xi Jinping on Governance</i>, Volume III, Foreign Languages Press, 2020.</p> <p>(4) <i>Xi Jinping on the Governance of the Country</i>, Volume IV, Foreign Languages Publishing House, 2022.</p>

13 College Physical Education I

College Physical Education I

Curriculum Name	College Physical Education I		
Curriculum Level	Undergraduate Level		
Curriculum Code	08A21001		
Affiliated Modules	Self-improvement Module		
Semester	1st Semester		
Contact Person	Huang Jianzhen		
Lecturers	Huang Jianzhen, Zhang Guizhi, Zhang Li		
Language	Chinese		
Nature of the Curriculum	Compulsory Course		
Teaching Methods	Methods of Practice (demonstration, explanation, instruction, completeness, decomposition, games and competitions)		
Workload	<p>60 Hours in Total (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 48 hours (2 credits * 24 hours, to be completed in 12 weeks, with an average of 4 credit hours per week, including theoretical teaching, discussions, exercises, etc.).</p> <p>2. Self-study: 12 hours (2 credits * 6 hours, to be completed in 6 weeks, with an average of 2 credit hours per week, including preview, online learning, post-class review, exercises, homework, and exam preparation).</p>		
ECTs Credits	2 Credits		
Prerequisite Curricula	—		
Learning Outcomes and Their Corresponding ILOs	Curriculum Learning Outcomes (CLOs)	Descriptions	Supported Intended Learning Objective (ILOs)
	CLO-1	Cultivate the martial virtues and rituals of Martial arts; grasp the characteristics and development	R9, R10

		overview of Martial arts and Taiji; grasp the exercise value of radio gymnastics	
	CLO-2	Master the 10th set of radio gymnastics, five-step boxing, 12-style Taiji technical movements, master some physical fitness technical movements, and be familiar with physical fitness practice methods.	R11, R12
	CLO-3	Be able to master some competition rules and refereeing laws of physical fitness; to master the basic skills of martial arts, and to master the prevention and treatment of sports injuries.	R9, R12
Contents	<p>College Physical Education I is a compulsory public course for college students to take physical exercise as the main means to achieve the main goals of strengthening physical fitness, improving physical and mental health, improving physical literacy and cultivating lifelong physical exercise habits through reasonable physical education and scientific physical exercise processes; it is an important part of the school curriculum system; it is the centre of physical education in institutions of higher education; and it is an important way to promote the harmonious development of the body and mind, education in ideology and morality, education in culture and science, and education in life and physical skills in physical activities; it is an important way to carry out quality education and to cultivate talents with all-round development. The teaching content of this semester is mainly based on the tenth set of radio gymnastics, five-step boxing, 12-style Taiji, supplemented by the study of sprints, long jump and other items in track and field. Through the study of this semester, the students' body coordination will be improved to a certain extent, and the physical quality will be enhanced, so as to lay a certain physical foundation for the study of the later option courses.</p> <p>Chapter I Tenth Set of Radio Gymnastics</p> <p>Chapter II Basic Hand Forms, Techniques, Step Forms and Footwork in Martial Arts</p> <p>Chapter III Five-Step Fist</p>		

	<p>Chapter IV Overview of the Development of Taiji, Basic Movements of Taiji</p> <p>Chapter V 12-Style Taiji</p> <p>Chapter VI Track and Field Origins and Values, Track and Field Judging Law and Theory</p> <p>Chapter VII Running around the Bend Techniques</p> <p>Chapter VIII Endurance Running Techniques</p> <p>Chapter VIII Squatting Long Jump Techniques</p>
Study and Examination Requirements and Forms of Examination	<p>The final examination of the course is a practical examination of 90 minutes duration. The final grade for the course consists of both a technical examination and a regular grade, including the final exam grade 50%, usual performance (including attendance, classroom testing and after-class exercise) 50%. Students must obtain a final grade of 60 or above to pass the course.</p>
Media Employed	<p>Computer, projector, blackboard, PPT courseware, online website</p>
Reading List/Reference	<p>(1) Deng Yuening. <i>The New College Physical Education Curriculum</i>, Third Edition. China Agricultural Publishing House. August 2016. isbn 9787109218390</p> <p>(2) Qiu Jianguo. <i>College Physical Education</i>. Edition 1. Higher Education Press. August 2015. ISBN 9787040435412</p> <p>(3)Gong Jianwei. <i>A Curriculum for Physical Education and Health in Universities</i>. Edition 1. Science Press . . 08 2014. ISBN 9787030415363</p> <p>(4) <i>National Committee on Teaching Materials for Physical Education Colleges and Universities</i>. University Physical Education Curriculum People's Sports Press. 07 July 2017. ISBN 9787500943679</p> <p>(5) Other references: web resources and electronic materials</p>

14 College Physical Education II

College Physical Education II

Curriculum name	College Physical Education II		
Course level	Undergraduate level		
Course code	08A21002		
Module	Self-literacy improvement module		
Semester	The second semester		
Course leader	Wan Yuan		
Teaching teacher	Wan Yuan, Deng Guofeng, Wen Yuan, Le Shiqing, Liu Jiaqian, Zhang Tengpeng, Zhang Shubing, Zhang Xiaobao		
Language	Chinese		
Nature of the course	Mandatory		
Teaching methods	Practical methods (model method, explanation method, guidance method, complete method, decomposition method, game method and competition method)		
Workload	<p>Total course hours: 60 hours (1 class hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 32 hours (2 credits * 16 hours, completed in 16 weeks, an average of 2 hours per week, including theoretical teaching, discussions, exercises, etc.).</p> <p>2. Private study: 28 hours (2 credits * 14 hours, completed in 14 weeks, an average of 2 hours per week, including pre-class preview, online study, after-class review, practice, homework, and exam preparation).</p>		
Credit	2 credits		
Pre-study courses	College Physical Education I		
Learning results and their corresponding training goals	Course learning results	Describe	Supported learning objectives
	Learning results-1	Through the teaching of this course, students' ideological education will be strengthened, so that students can clarify the purpose of physical	R9, R10

		<p>education. Improve its comprehensive quality in an all-round way and lay a good foundation for lifelong exercise. Cultivate good moral qualities and professional habits that students should have when engaging in sports group activities. Able to assume the roles of individuals, team members and leaders in a team in a multidisciplinary background.</p>	
	<p>Learning results-2</p>	<p>Have the consciousness and habit of independent learning and lifelong learning, and have the ability to continuously learn and adapt to career development. Through learning, cultivate students' excellent qualities such as hard-working, perseverance, unity and mutual assistance.</p>	<p>R11, R12</p>
<p>Content</p>	<p>College SportsII(Football)is a teaching model that focuses on physical fitness and sports skills options. This course is a public compulsory course that focuses on physical exercise as the main means, and aims to enhance physical fitness, enhance health, and enhance physical literacy through reasonable physical education and scientific physical exercise processes; It is an important component of the school curriculum systemcy. It is an important part of the school curriculum system.</p> <ol style="list-style-type: none"> 1. Overview of football 2. Ball control and familiarity with ball practice 3. Learn the skill of kicking on the inside of the foot 4. Learn the technique of stopping the ball on the inside of the foot 5. Learn the technique of kicking on the inside of the instep 		

6. Learn the technique of kicking in the instep
7. Strength exercise
8. Learn how to catch the ground ball
9. Learn how to catch the ball in the air
10. Improve the ability to use passing and receiving technology in the game
11. Learn shooting skills
12. Learn the heading technique
13. Learn the skills of goalkeeper
14. Football competition rules and referees
15. Review the basic skills of football
16. Examination practice

College SportsII(Basketball) is a compulsory course in public physical education. The teaching content includes basic theoretical knowledge of basketball; Basic skills: basketball attack and defense techniques such as movement, passing and receiving, shooting, dribbling, dribbling, dribbling, breaking through, and defending opponents; Basic tactics and other basketball offensive and defensive tactics; Through learning, students can master the application of basic and commonly used techniques, tactics, and theoretical knowledge, thereby developing their physical fitness and enhancing their physical fitness. Cultivate a collective spirit of unity, cooperation, competition, and mutual assistance among students.

1. Overview of basketball and familiarity with the ball
2. Learn basic posture, start, and catch the ball with both hands and chest.
3. Learn to dribble, stop, and shoot on the shoulder with one hand in place.
4. Learn to turn around, stop, and review the ball with both hands and chest.
5. Learn to slide and go on a one-handed layup
6. Learn to shoot with one hand and low hand, and review shooting with one hand and shoulder.
7. Learn to pass the ball with one hand over the shoulder and review one hand low hand shooting during movement.

8. Learn to defend players and review one-handed low-handed shooting between marches.

9. Learn to retreat, review sliding steps, shoot on one-handed shoulder, pass the ball in front of both hands and chest, teaching games

10. Learn to defend without team members, teaching games

11. Learn to cooperate through, learn to cooperate with prevention, and learn to cooperate with closing the door.

12. Practice assessment

College SportsII(Volleyball) is a compulsory course in public physical education. Volleyball is a skillful, confrontational, collective,Sports projects with high gameplay and comprehensive offensive and defensive technology can promote communication and exchange among students, and cultivate students' excellent qualities such as mutual help, unity, cooperation, forge ahead and courage.

1 Introduction to the basics of volleyball

2 Learn to cushion the ball with both hands

3 Learn to pass the ball head-on

4 Learning Simple Teaching Competition

5 Learn mobile front-hand pass technology

6 Master the technique of front hand pass and front hand pad

7 Learn to serve head-on

8 Teaching Competition

9 Learn side-to-hand serve technology

10 Learn to serve head-on

11 Teaching Competition

12 Learn hand-on serve technology

13 Learn blocking technology

14 Learning"Middle one and two"Offensive tactics

15 Review the content of the exam

	<p>16 Practical assessment</p> <p>College SportsII(Martial Arts)The course isThe second semester of freshman yearPublicPE classCompulsory courses. PrimaryNorthern boxingThe third roadIt is a routine-based boxing, which is not only suitable for basic martial arts training, but also suitable for competition and technical improvement.PrimaryNorthern boxingThe third roadFeatures: posture stretching, flexible movements, fast and powerful, distinct rhythm, and many movements and techniques such as ups and downs, jumping, falling and rolling.</p> <p>1 Overview and basic skills of martial arts</p> <p>2 Learn the third way to prepare for the primary long boxing and the first stage 1-4 movement</p> <p>3 Learn the first section of the third road to learn the primary long boxing 5-8 movement</p> <p>4 Learn the first-level long boxing, the third road, the second section, 1-5 movement</p> <p>5 Learn the third section of the third long boxing, the second section 6-8 movement and the third section 1-2 movement</p> <p>6 Detection of Primary Long Fist Third Road Section 1-2</p> <p>7 Learn the third section of the third road of the primary long boxing</p> <p>8 Speed practice</p> <p>9 Learn the third section of the third road of the junior long boxing</p> <p>10 Endurance exercises (800M run)</p> <p>11 Learn the third section of the third road to learn the primary long boxing 7-8 movement</p> <p>12 Learn the fourth section of the third road of the junior long boxing 1-3 movement</p> <p>13 Learn the fourth section of the third road of the primary long boxing 4-5 movement</p> <p>14 Learning Primary Long Fist Third Road Fourth Section 6-8 Movement</p> <p>15 Learn the end action of the third way to learn the junior long fist</p> <p>16 Practical assessment</p>
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College SportsII(Aerobics) is a highly popular and popular sports activity that combines group exercises, dance, music, fitness, and entertainment, with high fitness value. Aerobics is an aerobic exercise characterized by a sustained, moderate to low degree of whole-body exercise that primarily exercises the cardiovascular function of the practitioner and is the foundation of aerobic endurance.

1. The concept and classification of aerobics
2. The origin and development of aerobics
3. Learn the basic pace combination and arm movement combination of aerobics
4. Learn the first combination of the fourth set of public aerobics standard first-level prescribed movements
5. Learn the second combination of the fourth set of public aerobics standard level 1.
6. Learn the third combination of the fourth set of public aerobics standard first-level prescribed movements
7. Learn the fourth set of public aerobics standard first-level prescribed movements and the fourth combination
8. 800m, 1000m test
9. Examination practice

College Physical Education IV (Cuqiu) is a compulsory course in public physical education, with teaching content including basic theoretical knowledge, basic techniques, and basic tactics of cuqiu; Through learning, students can master the application of basic and commonly used techniques, tactics, and theoretical knowledge, thereby developing their physical fitness and enhancing their physical fitness. Cultivate a collective spirit of unity, cooperation, competition, and mutual assistance among students.

1. Learn what kickball is.
2. Understand the basic action of kicking the ball
3. Learn how to play the ball game
4. The general rules of learning football (I)

5. General Rules of Learning Cuqiu (II)
6. Learn the technique of playing billiards
7. Learn the technology of kicking the ball on the side.
8. Learn the spinning ball technology
9. Learn the tactics of kickball serve
10. Explain the common mistakes of kicking the ball
11. Learn the tactics of kicking the ball
12. Learn the tactics of scoring before kicking the ball
13. Learn the tactics of losing points and running tactics
14. Comprehensive use of technology and tactics teaching competition
15. Practice assessment

College Physical Education II (Sanda) is a teaching model that focuses on physical fitness and sports skills options. This course is a public compulsory course that focuses on physical exercise as the main means, and aims to enhance physical fitness, enhance health, and enhance physical literacy through reasonable physical education and scientific physical exercise processes.

1. Overview of Sanda
2. Learning steps
3. Learn the basic boxing of Sanda—Straight fist
4. Learn the basic boxing of Sanda—Swing the fist
5. Learn the basic boxing of Sanda—Hook
6. Learn the basic boxing of Sanda—Flat hook
7. Learn combination boxing
8. Strike strength exercise
9. Learn the loose leg method.—Whip legs
10. Learn the loose leg method.—Just kicking.

11. Learn the loose leg method.—Side kick

12. Sensitive practice

13. Examination practice

College Physical Education II(Taekwondo) is a public compulsory course that focuses on physical exercise as the main means, and aims to enhance physical fitness, enhance physical and mental health, improve physical literacy, and cultivate lifelong physical exercise habits through reasonable physical education and scientific physical exercise processes.

1. Overview of Taekwondo

2. Preparation posture and basic footing

3. Basic leg method: front kick

4. Basic leg method: kick in front of the sky

5. Basic leg method: split down

6. Basic leg method: horizontal kick

7. Combination technique: (step + leg method)

8. Combination technology (leg method + leg method)

9. Physical fitness exercises

10. Block defense technology

11. Character: Taiji Chapter

12. Taekwondo competition rules and referees

13. Take an examination

College SportsII(Sports dance) aims to cultivate students' theoretical knowledge, dance skills, scientific fitness methods, and lifelong sports thinking in sports dance, and to develop a habit of lifelong exercise based on a deep understanding of how to use sports dance for fitness, improve aesthetic ability and cooperation awareness.

1. Introduce the basic knowledge of sports dance

2. Learning is exactly the place to change the center of gravity.

3. It's just the right time to learn.
4. Learn to change the center of gravity, time step and connection step in place.
5. Learn exactly the square steps.
6. Learning is just a step in New York.
7. Learn to take 1/4 of the square steps.
8. Learn to take over steps.
9. Learning is exactly the right step.
10. Learning is just the right step forward.
11. Learn to dance backwards.
12. Take an examination

College Physical Education II (Taijiquan) is a public compulsory course that focuses on physical exercise as the main means, and aims to enhance physical fitness, improve health, and enhance physical literacy through reasonable physical education and scientific physical exercise processes; It is an important component of the school curriculum system; It is the central link of physical education work in higher education institutions; It is an educational process that promotes the harmonious development of body and mind, ideological and moral education, cultural and scientific education, life and sports skills education, and organically combines them with physical activities; It is an important way to implement quality education and cultivate well-rounded talents.

1. Overview and basic skills of Taijiquan
2. Learn Type 24 Taijiquan Type 1~3
3. Learn 24 styles of Taijiquan 4~6
4. Learn Type 24 Taijiquan 7~8
5. Learn the movements of Taijiquan cloud hands
6. Learn Type 24 Taijiquan Type 9~11
7. Learn Type 24 Taijiquan Type 12~15
8. Learn Type 24 Taijiquan 16~17
9. Learn Type 24 Taijiquan Type 18~20

	<p>10. Learn 24-style Taijiquan 21-24-style</p> <p>11. Physical comprehensive fitness exercise</p> <p>12. Examination practice</p>
Study and examination requirements and examination form	<p>The final examination method of this course is a practical examination, and the examination time is 90 minutes. The final score of the course consists of two parts: the total score: the technical examination and the normal score. Among them, the technical examination accounts for 50% of the total evaluation, and the usual results (including attendance, classroom testing and after-school exercise, etc.) account for 50%. Students must get a final score of more than 60 points to pass.</p>
Media used	<p>Online website</p>
Reading list	<p>1. Deng Yuening. The third edition of the new college sports tutorial. China Agricultural Publishing House. August 2016. ISBN9787109218390</p> <p>2. Qiu Jianguo. College Sports. Version 1. Higher Education Press. August 2015. ISBN9787040435412</p> <p>3. Gong Jianwei. College Sports and Health Course. Version 1. Science Press. August 2014. ISBN9787030415363</p> <p>4. National Sports College Textbook Committee. College Sports Course. People's Sports Publishing House. July 2017. ISBN9787500943679</p> <p>5. Other reference materials: network resources and electronic materials</p>

15 College Physical Education III

College Physical Education III

Curriculum name	College Physical Education III		
Course level	Undergraduate level		
Course code	08A21003		
Module	Self-literacy improvement module		
Semester	Semester 3		
Course leader	Wan Yuan		
Teaching teacher	Wan Yuan, Deng Guofeng, Wen Yuan, Le Shiqing, Liu Jiaqian, Zhang Tengting		
Language	Chinese		
Nature of the course	Mandatory		
Teaching methods	Practical methods (model method, explanation method, guidance method, complete method, decomposition method, game method and competition method)		
Workload	<p>Total class hours:60 hours (1 class hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching:32 hours (2 credits * 24 hours, completed in 16 weeks, an average of 2 hours per week, including theoretical teaching, discussions, exercises, etc.).</p> <p>2. Private study:28 hours (2 credits * 14 hours, completed in 14 weeks, an average of 2 hours per week, including pre-class preview, online study, after-class review, practice, homework, and exam preparation).</p>		
Credit	2 credits		
Pre-study courses	College Physical Education I, College Physical Education II		
Learning results and their corresponding training goals	Course learning results	Describe	Supported learning objectives
	Learning results-1	Through the teaching of this course, students' ideological education will be strengthened, so that students can clarify the purpose of physical	R9, R10

		<p>education. Improve its comprehensive quality in an all-round way and lay a good foundation for lifelong exercise. Cultivate good moral qualities and professional habits that students should have when engaging in sports group activities. Able to assume the roles of individuals, team members and leaders in a team in a multidisciplinary background.</p>	
	<p>Learning results-2</p>	<p>Have the consciousness and habit of independent learning and lifelong learning, and have the ability to continuously learn and adapt to career development. Through learning, cultivate students' excellent qualities such as hard-working, perseverance, unity and mutual assistance.</p>	<p>R11, R12</p>
<p>Content</p>	<p>College Physical Education II(Football) is a teaching model that focuses on physical fitness and sports skills options. This course is a public compulsory course that focuses on physical exercise as the main means, and aims to enhance physical fitness, enhance health, and enhance physical literacy through reasonable physical education and scientific physical exercise processes; It is an important component of the school curriculum system .</p> <p>17. Overview of football</p> <p>18. Ball control and familiarity with ball practice</p> <p>19. Learn the skill of kicking on the inside of the foot</p> <p>20. Learn the technique of stopping the ball on the inside of the foot</p> <p>21. Learn the technique of kicking on the inside of the instep</p>		

22. Learn the technique of kicking in the instep
23. Strength exercise
24. Learn how to catch the ground ball
25. Learn how to catch the ball in the air
26. Improve the ability to use passing and receiving technology in the game
27. Learn shooting skills
28. Learn the heading technique
29. Learn the skills of goalkeeper
30. Football competition rules and referees
31. Review the basic skills of football
32. Examination practice

College Physical Education II(Basketball)》 is a compulsory course in public physical education. The teaching content includes basic theoretical knowledge of basketball; Basic skills: basketball attack and defense techniques such as movement, passing and receiving, shooting, dribbling, dribbling, dribbling, breaking through, and defending opponents; Basic tactics and other basketball offensive and defensive tactics; Through learning, students can master the application of basic and commonly used techniques, tactics, and theoretical knowledge, thereby developing their physical fitness and enhancing their physical fitness. Cultivate a collective spirit of unity, cooperation, competition, and mutual assistance among students.

8. Overview of basketball and familiarity with the ball
9. Learn basic posture, start, and catch the ball with both hands and chest.
10. Learn to dribble, stop, and shoot on the shoulder with one hand in place.
11. Learn to turn around, stop, and review the ball with both hands and chest.
12. Learn to slide and go on a one-handed layup
13. Learn to shoot with a low hand and one hand on the march and shoot with one hand on the shoulder
14. Learn to shoot with one hand and low hand, and review shooting with one hand and shoulder.

8. Learn to defend players and review one-handed low-handed shooting between marches.

9. Learn to retreat, review sliding steps, shoot on one-handed shoulder, pass the ball in front of both hands and chest, teaching games

10. Learn to defend without team members, teaching games

11. Learn to cooperate through the training, learn to cooperate with the reinforcement and defense, and learn to cooperate with the closing of the door

12. Practice assessment

College Physical Education II(Volleyball) is a compulsory course in public physical education. Volleyball is a skillful, confrontational, collective sports projects with high gameplay and comprehensive offensive and defensive technology, which can promote communication and exchange among students, and cultivate students' excellent qualities such as mutual help, unity, cooperation, forge ahead and courage.

1 Introduction to the basics of volleyball

2 Learn to cushion the ball with both hands

3 Learn to pass the ball head-on

4 Learning Simple Teaching Competition

5 Learn mobile front-hand pass technology

6 Master the technique of front hand pass and front hand pad

7 Learn to serve head-on

8 Teaching Competition

9 Learn side-to-hand serve technology

10 Learn to serve head-on

11 Teaching Competition

12 Learn hand-on serve technology

13 Learn blocking technology

14 Learning"Middle one and two"Offensive tactics

	<p>5 Review the content of the exam</p> <p>16 Practical assessment</p> <p>College Physical Education II(Martial Arts) is a compulsory course for public physical education in the second semester of freshman year. The third route of basic Changquan is a boxing technique that focuses on routines, which is suitable for both basic martial arts training and competition, as well as improving technical skills. The characteristics of the third route of basic Changquan are: relaxed posture, flexible movements, fast and powerful movements, distinct rhythm, and multiple movements and techniques such as ups and downs, jumping and jumping, falling and rolling.</p> <p>1 Overview and basic skills of martial arts</p> <p>2. Learn the third preparatory move and first stage 1-4 movements of beginner long fist</p> <p>3. Learn the 5-8 movements of the first section of the third route of beginner Changquan</p> <p>4. Learn the 1-5 movements of the second section of the third route of beginner's Changquan</p> <p>5. Learn the second section of the third route of beginner Changquan, 6-8 movements, and the third section 1-2</p> <p>6. Detection of Primary Changquan Third Route, Sections 1-2</p> <p>Learn the third section of the third route of beginner Changquan</p> <p>8 speed exercises</p> <p>9. Learn the third section of the third route of beginner Changquan</p> <p>10 Endurance exercises (800M run)</p> <p>11 Learn the 7-8 movements of the third section of the third route in beginner's Changquan</p> <p>12 Learn the 1-3 movements of the fourth section of the third route of beginner Changquan</p> <p>13 Learn the 4-5 movements of the fourth section of the third route of beginner Changquan</p> <p>14 Learn the 6-8 movements of the fourth section of the third route of beginner</p>
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	<p>Changquan</p> <p>15 Learn the ending movement of the third move in beginner's Changquan</p> <p>16 Practical assessment</p> <p>College Physical Education II (Aerobics) is a highly popular and popular sports activity that combines group exercises, dance, music, fitness, and entertainment, with high fitness value. Aerobics is an aerobic exercise characterized by a sustained, moderate to low degree of whole-body exercise that primarily exercises the cardiovascular function of the practitioner and is the foundation of aerobic endurance.</p> <p>10. The concept and classification of aerobics</p> <p>11. The origin and development of aerobics</p> <p>12. Learn the basic pace combination and arm movement combination of aerobics</p> <p>13. Learn the first combination of the fourth set of public aerobics standard first-level prescribed movements</p> <p>14. Learn the second combination of the fourth set of public aerobics standard level 1.</p> <p>15. Learn the third combination of the fourth set of public aerobics standard first-level prescribed movements</p> <p>16. Learn the fourth set of public aerobics standard first-level prescribed movements and the fourth combination</p> <p>17. 800m, 1000m test</p> <p>18. Examination practice</p> <p>College Physical Education IV(Cuqiu) is a compulsory course in public physical education, with teaching content including basic theoretical knowledge, basic techniques, and basic tactics of cuqiu; Through learning, students can master the application of basic and commonly used techniques, tactics, and theoretical knowledge, thereby developing their physical fitness and enhancing their physical fitness. Cultivate a collective spirit of unity, cooperation, competition, and mutual assistance among students.</p>
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16. Learn what kickball is.
17. Understand the basic action of kicking the ball
18. Learn how to play the ball game
19. The general rules of learning football (I)
20. General Rules of Learning Cuqiu (II)
21. Learn the technique of playing billiards
22. Learn the technology of kicking the ball on the side.
23. Learn the spinning ball technology
24. Learn the tactics of kicking the ball
25. Explain the common mistakes of kicking the ball
26. Learn the tactics of kicking the ball
27. Learn the tactics of scoring before kicking the ball
28. Learn the tactics of losing points and running tactics
29. Comprehensive use of technology and tactics teaching competition
30. Practice assessment

College Physical Education II(Sanda) is a teaching model that focuses on physical fitness and sports skills options. This course is a public compulsory course that focuses on physical exercise as the main means, and aims to enhance physical fitness, improve health, and enhance physical literacy through reasonable physical education and scientific physical exercise processes

14. Overview of Sanda
15. Learning steps
16. Learn the basic boxing of Sanda—Straight fist
17. Learn the basic boxing of Sanda—Swing the fist
18. Learn the basic boxing of Sanda—Hook
19. Learn the basic boxing of Sanda—Flat hook
20. Learn combination boxing

21. Strike strength exercise
22. Learn the loose leg method.—Whip legs
23. Learn the loose leg method.—Just kicking.
24. Learn the loose leg method.—Side kick
25. Sensitive practice
26. Examination practice

College Physical Education II(Taekwondo)CourseIt is a public compulsory course with the main goal of physical exercise as the main means, through reasonable physical education and scientific physical exercise process, to achieve the main goal of strengthening physique, improving physical and mental health, improving physical literacy and cultivating lifelong physical exercise habits.

14. Overview of Taekwondo
15. Preparation posture and basic footing
16. Basic leg method: front kick
17. Basic leg method: kick in front of the sky
18. Basic leg method: split down
19. Basic leg method: horizontal kick
20. Combination technique: (step + leg method)
21. Combination technology (leg method + leg method)
22. Physical fitness exercises
23. Block defense technology
24. Character: Chapter One of Tai Chi
25. Taekwondo competition rules and referees
26. Take an examination

The College Physical Education II (Taekwondo) course is a public compulsory course that focuses on physical exercise as the main means, and aims to enhance physical fitness, enhance physical and mental health, improve physical literacy, and cultivate lifelong physical exercise habits through reasonable physical education and

scientific physical exercise processes.

13. Introduce the basic knowledge of sports dance

14. Learning is exactly the place to change the center of gravity.

15. It's just the right time to learn.

16. Learn to change the center of gravity, time step and connection step in place.

17. Learn exactly the square steps.

18. Learning is just a step in New York.

19. Learn to take 1/4 of the square steps.

20. Learn to take over steps.

21. Learning is exactly the right step.

22. Learning is just the right step forward.

23. Learn to dance backwards.

24. Take an examination

13. College Physical Education II(Tai Chi) is a public compulsory course that focuses on physical exercise as the main means, and aims to enhance physical fitness, improve health, and enhance physical literacy through reasonable physical education and scientific physical exercise processes; It is an important component of the school curriculum system; It is the central link of physical education work in higher education institutions; It is an educational process that promotes the harmonious development of body and mind, ideological and moral education, cultural and scientific education, life and sports skills education, and organically combines them with physical activities; It is an important way to implement quality education and cultivate all-round talents.

16 College Physical Education IV

College Physical Education IV

Course Title	College Physical Education IV		
Course Level	Undergraduate level		
Course Code	08A21004		
Module	Self-improvement Module		
Semester	Semester 4		
Course manager	Wang Yuan		
Lecturer	Wang Yuan,Deng Guofeng,Wen Yuan,Lei Shiqing,Liu Jiaqian,Zhang Tengteng		
Language	Chinese		
Course Nature	Compulsory Course		
Teaching Method	Practical methods (demonstration, explanation, instruction, completeness, decomposition, games and competition)		
Workload	<p>Total class hours: 60 hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 32 hours (2 credits * 24 hours, completed in 16 weeks, with an average of 2 hours per week, including theoretical teaching, discussion, exercises, etc.).</p> <p>2. Self-study: 28 hours (2 credits * 14 hours, completed in 14 weeks, with an average of 2 hours per week, including pre-class preparation, online learning, after-class review, exercises, homework, and exam preparation).</p>		
Credit	2 credits		
Prerequisite Course	College Physical Education I,College Physical Education II		
Learning outcomes and corresponding training objectives	Curriculum Learning Outcomes	Description	Supported Learning Objectives
	Learning Outcomes -1	Through the teaching of this course, we aim to strengthen students' ideological education and make them clear about the purpose of physical education teaching,	R9,R10

		comprehensively improving their comprehensive qualities and laying a solid foundation for lifelong exercise. Meanwhile, we aim to cultivate good moral qualities and professional habits that students should possess when engaging in sports group activities, making them play the roles of individual, team member and leader in a multidisciplinary team.	
	Learning Outcomes -2	Making students form the awareness and habit of independent learning and lifelong learning, and the ability to continuously learn and adapt to career development. Through the teaching of this course, we aim to cultivate students with excellent qualities such as hard work, perseverance, unity and mutual assistance.	R11,R12
Content	<p>The course of <i>College Physical Education II (Football)</i> is a teaching model that focuses on physical fitness and sports skills. This course is a public compulsory course that focuses on physical exercise as the main means, and aims to strengthen physical fitness, improve health, and enhance physical literacy through reasonable physical education and scientific physical training processes; It is an important component of the school curriculum system.</p> <p>17. Overview of Football</p> <p>18. Control the ball and practice familiarizing oneself with the ball</p> <p>19. Learn inner foot kicking techniques</p> <p>20. Learn the technique of stopping the ball on the inside of the foot</p> <p>21. Learn the technique of kicking the ball on the inner side of the instep</p> <p>22. Learn the technique of frontal kicking with the back of the foot</p>		

23. Strength exercises
24. Learn the technique of catching the ground ball
25. Learn the technique of catching airborne balls
26. Improve the ability to use passing and receiving techniques in matches
27. Learn shooting techniques
28. Learn Heading Techniques
29. Learn goalkeeping skills
30. Football Competition Rules and Refereeing Law
31. Review basic football techniques
32. Exam Practice

The course of *College Physical Education II (Basketball)* is a compulsory course in public physical education. The teaching content includes basic theoretical knowledge of basketball; Basic skills: basketball attack and defense techniques such as moving, passing and receiving, shooting, dribbling, breaking through with a ball, and defending opponents; Basic tactics and other basketball offensive and defensive tactics; Through learning, students can master the application of basic and commonly used techniques, tactics, and theoretical knowledge, thereby developing their physical fitness and enhancing their physical fitness. Besides, it can cultivate a collective spirit of unity, cooperation, competition, and mutual assistance among students.

8. Overview of Basketball and Familiarity with Ball Performance
9. Learn basic posture, starting, and passing and receiving the ball with both hands in front of the chest
10. Learn dribbling, quick stops, and one handed shoulder shooting in place
11. Learn to turn around, make quick stops, and review passing and receiving the ball with both hands in front of the chest
12. Learn how to slide and perform one handed layups during movement
13. Learn to take one handed low hand shots while moving, and review one handed shoulder shots
14. Learn one handed shoulder pass and review one handed low handed shooting during

	<p>movement</p> <p>8. Learn how to defend players with the ball and review one handed low handed shots during movement</p> <p>9. Learn to take a step back, review the slide, take a one handed shoulder shot, pass and receive the ball with both hands in front of the chest, and teach the game</p> <p>10. Learn to defend players without the ball and teach the game</p> <p>11. Learn to pass through coordination, learn to complement and prevent coordination, and learn to close the door coordination</p> <p>12. Practical assessment</p> <p style="padding-left: 40px;">The course of <i>College Physical Education II (Volleyball)</i> is a compulsory course in public physical education. Volleyball is a sport with strong technical and adversarial skills, high collectivism and gameplay, and comprehensive offensive and defensive techniques. It can promote communication and exchange among students, and cultivate excellent qualities such as mutual help, unity, cooperation, striving, and bravery.</p> <p>1 Introduction to Basic Knowledge of Volleyball</p> <p>2 Learn to play the ball with both hands facing forward</p> <p>3 Learn to pass the ball head-on</p> <p>4 Learning Simple Teaching Competition</p> <p>5 Learn the technique of passing the ball with a forward hand on the move</p> <p>6 Master the techniques of frontal overhand passing and frontal two handed dribbling</p> <p>7 Learn to serve with a positive underhand</p> <p>8 Teaching competitions</p> <p>9 Learn lateral underhand serving techniques</p> <p>10 Learn the technique of frontal serve</p> <p>11 Teaching Competition</p> <p>12 Learn the technique of playing serve with the upper hand</p> <p>13 Learn blocking techniques</p>
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	<p>14 Learn the offensive tactics of “Zhong Yi Er”</p> <p>15 Review exam content</p> <p>16 Practical assessment</p> <p>The course of <i>College Physical Education II (Martial Arts)</i> is a compulsory course for public physical education in the second semester of freshman year. The third set of elementary Changquan is a Chinese boxing that focuses on routines, which is suitable for both basic martial arts training and competition, as well as improving technical skills. The third set of elementary Changquan characterizes relaxed posture, flexible action, fast and powerful movements, distinct rhythm, and multiple movements and techniques such as ups and downs, jumping, falling and rolling.</p> <p>1 Overview of martial arts and basic skills</p> <p>2 Learn the preparatory posture and the first section 1-4 movements of the third set of elementary Changquan</p> <p>3 Learn the first section 5-8 movements of the third set of elementary Changquan</p> <p>4 Learn the second section 1-5 movements of the third set of elementary Changquan</p> <p>5 Learn the second section 6-8 movements and the third section 1-2 movements of the third set of elementary Changquan</p> <p>6 Test the 1-2 section of the third set of elementary Changquan</p> <p>7 Learn the third section of the third set of elementary Changquan</p> <p>8 Speed practice</p> <p>9 Learn the third section of the third set of elementary Changquan</p> <p>10 Endurance practice (800M run)</p> <p>11 Learn the third section 7-8 movements of the third set of elementary Changquan</p> <p>12 Learn the fourth section 1-3 movements of the third set of elementary Changquan</p> <p>13 Learn the fourth section 4-5 movements of the third set of elementary Changquan</p> <p>14 Learn the fourth section 6-8 movements of the third set of elementary Changquan</p> <p>15 Learn the ending movements of the third set of elementary Changquan</p> <p>16 Practical assessment</p>
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College Sports II (Aerobics) is a highly popular sports activity that combines group exercises, dance, music, fitness, and entertainment, with high fitness value.

Aerobics is an aerobic exercise characterized by a sustained, moderate to low degree of whole-body exercise that primarily exercises the cardiovascular function of the practitioner and is the foundation of aerobic endurance.

10. Concept and classification of aerobics

11. Origin and development of aerobics

12. Learn the basic step combination and arm movement combination of aerobics

13. Learn the first combination of level 1 prescribed movements in the fourth set of mass aerobics standards

14. Learn the second combination of level 1 prescribed movements in the fourth set of mass aerobics standards

15. Learn the third combination of level 1 prescribed movements in the fourth set of mass aerobics standards

16. Learn the fourth combination of level 1 prescribed movements in the fourth set of mass aerobics standards

17. 800m and 1000m test

18. Exam practice

The course of *College Physical Education IV (Cuqiu)* is a compulsory course in public physical education, with teaching content including basic theoretical knowledge, basic techniques, and basic tactics of cuqiu; Through learning, students can master the application of basic and commonly used techniques, tactics, and theoretical knowledge, thereby developing their physical fitness and enhancing their physical fitness. Besides, it can cultivate a collective spirit of unity, cooperation, competition, and mutual assistance among students.

16. Know what Cuqiu is

17. Know the basic movements of cudgel

18. Know the methods of cudgel matches

19. Learn the General Rules of Cuqiu (1)

20. Learn the General Rules of Cuqiu (2)

21. Learn the technique of positive billiards in Cuqiu
22. Learn the technique of side hitting in Cuqiu
23. Learn the technique of spinning the ball
24. Learn serving tactics in Cuqiu
25. Explain common mistakes in Cuqiu movements
26. Learn the tactic of borrowing balls in Cuqiu
27. Learn the tactics of scoring goals before Cuqiu
28. Learn the tactics of losing points and running balls in Cuqiu
29. Comprehensive application of technical and tactical teaching competition
30. Practical assessment

The course of *College Physical Education II (Sanda)* is a teaching model that focuses on physical fitness and sports skills. This course is a public compulsory course that focuses on physical exercise as the main means, and aims to strengthen physical fitness, improve health, and enhance physical literacy through reasonable physical education and scientific physical training processes.

14. Overview of Sanda
15. Learn to take a skip steps
16. Learn the Basic Fist Techniques of Sanda - Straight Fist
17. Learn the Basic Fist Techniques of Sanda - Swinging Fist
18. Learn the Basic Fist Techniques of Sanda - Hook Fist
19. Learn the Basic Fist Techniques of Sanda - Flat Hook Fist
20. Learn combination boxing
21. Strike Strength Exercise
22. Learn Leg Techniques of Sanda- Whipping the Leg
23. Learn Leg Techniques of Sanda - Straight Kick
24. Learn Leg Techniques of Sanda - Side Kick
25. Agility Exercises

26. Exam Practice

The course of *College Physical Education II (Taekwondo)* is a public compulsory course that focuses on physical exercise as the main means, and aims to strengthen physical fitness, improve physical and mental health, promote physical literacy, and cultivate lifelong physical exercise habits through reasonable physical education and scientific physical training processes

14. Overview of Taekwondo Sports

15. Preparation and basic footwork

16. Basic leg techniques: front kick

17. Basic leg technique: Kick in the air

18. Basic leg technique: downward slash

19. Basic leg technique: horizontal kick

20. Combination techniques: (footwork plus leg movements)

21. Combination techniques (leg techniques plus leg techniques)

22. Physical fitness exercises

23. Blocking and defensive techniques

24. Poomsae: Tai Chi Chapter I

25. Taekwondo Competition Rules and Referee Law

26. Examination

The course of *College Physical Education II (Sports Dance)* aims to cultivate students' theoretical knowledge, dance skills, scientific fitness methods, and lifelong sports idea. It also enables them to form a habit of lifelong exercise based on a deep understanding of how to use sports dance for fitness, and improve their aesthetic ability and cooperation awareness.

13. Introduce the basic knowledge of sports dance

14. Learn to change the centre of balance in the Cha Cha

15. Learn the time step of the Cha Cha

16. Learn to change the centre of balance in the Cha Cha, time step, and connection

	<p>step</p> <p>17. Learn the square step of the Cha Cha</p> <p>18. Learn the New York step of the Cha Cha</p> <p>19. Learn the 1/4 turn of the square step of the Cha Cha</p> <p>20. Learn the hand-to-hand step of the Cha Cha</p> <p>21. Learn the fixed-point turn of the Cha Cha</p> <p>22. Learn the forward lock step of the Cha Cha</p> <p>23. Learn the backward lock step of the Cha Cha</p> <p>24. Exam</p> <p>The course of <i>College Physical Education II (Tai Chi)</i> is a public compulsory course that focuses on physical exercise as the main means, and aims to strengthen physical fitness, improve health, and enhance physical literacy through reasonable physical education and scientific physical training processes; Besides, it is an important component of the school curriculum system and a central part of physical education work in higher education institutions; As an important way to implement quality education and cultivate well-rounded talents, it is an educational process that promotes the harmonious development of body and mind, combining ideological and moral education, cultural and scientific education, life and sports skills education with physical activities.</p> <p>13. Overview and Basic Skills of Tai Chi</p> <p>14. Learn 24-style Tai Chi 1~3</p> <p>15. Learn 24-style Tai Chi 4~6</p> <p>16. Learn 24-style Tai Chi 7~8</p> <p>17. Learn Tai Chi Cloud Hands</p> <p>18. Learn 24-style Tai Chi 9~11</p> <p>19. Learn 24-style Tai Chi 12~15</p> <p>20. Learn 24-style Tai Chi 16~17</p> <p>21. Learn 24-style Tai Chi 18~20</p>
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	<p>22. Learn 24-style Tai Chi 21~24</p> <p>23. Comprehensive Physical Fitness Exercise</p> <p>24. Exam Practice</p>
Learning and Exam Requirements and Format	<p>The final exam for this course is a practical exam with a duration of 90 minutes. The final grade of this course consists of two components: technical exam and normal performance. Among them, technical exam accounts for 50% of the total score, and normal performance (including attendance, classroom testing, and after-school exercise) accounts for 50%. Students must get a final score of 60 or more to pass.</p>
Media	<p>Online website</p>
Reading list	<ol style="list-style-type: none"> 1. Deng Yuening. <i>Newly Compiled College Physical Education Tutorial Third Edition</i>. China Agricultural Press. August 2016 ISBN9787109218390 2. Qiu Jianguo. <i>College Physical Education. Version 1</i>: Higher Education Press. August 2015 ISBN9787040435412 3. Gong Jianwei. <i>College Physical Education and Health Tutorial. Version 1</i>: Science Press. August 2014 ISBN9787030415363 4. National Physical Education College Textbook Committee. <i>College Sports Tutorial</i>. People's Sports Press, July 2017 ISBN9787500943679 5. Other reference materials: online resources and electronic materials

17 Physical Fitness Assessment for College Students

Physical Fitness Assessment for College Students

Course Title	Physical Fitness Assessment for College Students		
Course Level	Undergraduate level		
Course Code	08A21007		
Module	Self-improvement Module		
Semester	Semester 7		
Course Manager	Du Yongxin		
Lecturer	Wan Yuan, Du Yongxin		
Language	English		
Course Nature	Compulsory Course		
Teaching Method	Teacher-centered approach (lecture, questioning), individualized approach (unit teaching), practical approach (exercise)		
Workload	<p>Total class hours:30 hours (1 class hour =1 hour, 1ECTS=30 hours)</p> <p>Teaching: 12 hours (1 credit *12 hours, completed in 12 weeks, with an average of 1 hours per week, including theory teaching, discussion, testing, etc.)</p> <p>2. Self-study: 18 hours (1 credit *18 hours, completed in 9 weeks,with an average of 2 hours per week, including after-class review, exercises, homework, test preparation).</p>		
Credit	1 credit		
Prerequisite Course	College Physical Education I		
Learning Outcomes and Corresponding Training Objectives	Course Learning Outcomes	Description	Supported Learning Objectives
	Learning Outcome-1	Understand the overview of physical fitness and health; Master the methods of assessing and evaluating physical fitness; Master the value and purpose of physical fitness	R9

		measurement; Lay the foundation for reaching the standard of physical fitness Test.	
	Learning Outcome-2	Proficiently complete the physical fitness test items of National Student Physical Fitness Standards.	R12
	Learning Outcome-3	Understand current physical condition; Master methods of physical fitness and health intervention; Form a lifelong exercise habit.	R9, R12
Content	<p><i>Physical Fitness Assessment for College Students</i> is a course for college students to participate in physical fitness tests, examine and improve their physical fitness. Testers use standardized techniques, methods and approaches to organize students to participate in the actual assessment of the test items and related contents determined by the National Student Physical Fitness Standards, promote the development of students' physical fitness and encourage students to participate in physical exercise education, evaluation and feedback means, and focus on monitoring students' body shape, body function, physical fitness and athletic ability and their changing trends. The Ministry of Education dynamically adjusts and announces the physical fitness test items and test contents of students based on the growth and development characteristics of Chinese adolescent students, the changing trends of physical fitness of students across the country and the national school sports policy.</p> <p>Chapter I Overview of Constitution and Health</p> <p>Chapter II Measurement and Evaluation of the National Student Physical Fitness Standards</p> <p>Chapter III Physical Health Assessment of College Students</p> <p>Chapter IV Evaluation of College Students' Body Shape</p> <p>Chapter V Health Education Intervention Model for College Students</p>		
Learning and Exam Requirements and Format	The final examination of this course is a practical examination, and the test contents include: height, weight, lung capacity, 50-meter run, sitting forward bending, sit-ups (female), 800 meters (female), 1000 meters (male) and pull-ups (male).		

	<p>The total score for the academic year of this standard is composed of the sum of the standard score and the additional score, with a full score of 120 points. The standard score is composed of the sum of the product of the score of each individual indicator and the weight, with a full score of 100 points. The additional score is determined based on the actual test results, that is, additional points are added to the additional indicators with scores exceeding 100 points, with a full score of 20 points; the additional points are pull-ups and 1000-meter run for boys, and 1-minute sit-ups and 800-meter run for girls, and the additional points for each indicator are 10 points.</p> <p>Students must obtain a final score of 60 or more to pass.</p>
Media	Track-and-field ground, physical test equipment
Reading List	<ol style="list-style-type: none"> 1. Yan Feiwei. <i>Physical Health Evaluation and Health Education for College Students</i>. Zhejiang University Press. December 2013. ISBN7308124924 2. Liu Tao. <i>Physical Health Guidance Course for College Students</i>. Chemical Industry Press. October 2019. ISBN9787107207464 3. Peking University Sports and Health Center. <i>Physical Health Guidance Manual for College Students</i>. People's Education Press. January 2008. ISBN9787107207464 4. Other reference materials: online resources and electronic materials

18 Entrance Education

Entrance Education

Course Title	Entrance Education		
Course Level	Undergraduate level		
Course Code	13A21002		
Module	Self-improvement module		
Semester	Semester 1		
Course manager	Jiang Yuanyuan		
Lecturer	Li Shilong, Li Shuyao, Liu Xiaoyan		
Language	Chinese		
Course Nature	Required courses		
Teaching Method	Teacher-centered approach (lecture, questioning); practical approach (games, activities)		
Workload	<p>Total class hours: 26 hours (1 credit hour = 1 hour, 1 ECTS = 26 hours)</p> <p>1. Lectures: 12 hours (1 credit * 12 hours, completed in 12 weeks, with an average of 1 hour per week, including theoretical teaching , discussions, and activities).</p> <p>2. Self-study: 14 hours (1 credit * 14 hours, completed in 14 weeks, with an average of 1 hour per week, including exercises , homework , and review and preparation for exams).</p>		
Credit	1 credit		
Advanced Placement	—		
Learning Outcomes and Corresponding Training Objectives	Course Learning Outcomes	Description	Supported learning objectives
	Learning Outcome-1	Improve political awareness, stimulate patriotic enthusiasm, carry forward the spirit of revolutionary heroism, cultivate hard work, perseverance and collectivist spirit,	R8, R9

		enhance national defense concepts and organizational discipline, and develop a good style of study and life.	
	Learning Outcome-2	Be brave to take responsibility, practice the core values of socialism, enhance students' safety awareness and self-protection ability, clarify learning goals, and establish a correct learning concept. Update concepts, face yourself, understand society, enhance social responsibility and sense of mission, and establish a correct world view, outlook on life, and values.	R6, R12
Content	<p><i>Entrance Education</i> starts from the learning and practical activities of the first lesson of ‘Five Education Simultaneously’, and deeply implements the comprehensive development requirements of ‘Five Education Simultaneously’. The content includes ten aspects, including military skills, great craftsmen, patriotic songs, inspirational movies, special lectures, practical experience, talent show, discussion, inspirational mottos, and experience. It inspires students’ patriotic enthusiasm, improves their political awareness, and strengthens their ideals and beliefs, so that they can devote themselves to learning life with more enthusiasm and a more positive attitude.</p> <p>Chapter I Mastering 10 Military Skills</p> <p>Chapter II Tribute to 10 Great Craftsmen</p> <p>Chapter III Sing 10 Patriotic Songs</p> <p>Chapter IV Sing 10 Patriotic Songs</p> <p>Chapter V Listen to 10 Special Lectures</p> <p>Chapter VI Participate in 10 Practical Experiences</p>		
Learning and Exam Requirements and Format	The final exam of this course is a major assignment, which lasts 120 minutes. The final exam score accounts for 60% of the total score, and class assignments, extracurricular activities, questions, discussions, etc. account for 40%.		

Media	Computer, projector, blackboard, PPT courseware , online website
Reading List	Huang Jiawen and Wang Jinping, Never Forget the Original Intention and Keep the Mission in Mind: A Reader of Basic Party Knowledge, Jiangxi University Press, 2018 (1st edition).

19 National Security Education for College Students

National Security Education for College Students

Course Title	National Security Education for College Students		
Course Level	Undergraduate level		
Course Code	11AEQ179		
The Module	Self-literacy improvement module		
School Term	The third semester		
Course Leader	Yuan Jiao		
Teaching Teachers	Yuan Jiao		
Language	Chinese		
Course Nature	Elective		
Teaching Method, Teaching Time	Teacher-centered approach (lecturing, questioning, argumentation)		
Quantity Of Work	<p>Total class hour: 60 hours (1 class hour =1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 26 credit hours (2 credits * 13 credit hours, completed in 9 weeks, average 2.9 credit hours per week, including theoretical teaching, discussion and examination).</p> <p>2. Self-study: 34 hours (2 credits * 17 hours, completed in 11 weeks, an average of 3.1 hours per week, including online courses (learning pass), practice, homework, review and preparation).</p>		
Credit Hour	2 Credit		
Take The Course First	--		
Learning Results And Their Corresponding Training Objectives	Curriculum learning results	Characterization	Supported learning objectives
	Learning results-1	Identify with the overall national security concept, develop the political thinking consciousness of "preparing for danger in times of	R8

		peace, nip", strive to be a high-quality talent useful to the country and society, enhance the sense of responsibility, obligation and honor of safeguarding national security, strengthen students' ideals and beliefs, cultivate patriotism, improve students' comprehensive quality;	
	Learning results-2	To understand the importance of national security to the country and society, to realize that safeguarding national security is the responsibility of every citizen, to clarify the security situation in China, to grasp the content and scope of national security, and to attach importance to national security laws and regulations.	R6
	Learning results-3	In my study and work, I can form a national security awareness, realize the importance of my behavior and speech to national security, and can correctly exercise their rights and obligations.	R10,R12
	Learning results-4	To analyze the complex domestic and international environment, a comprehensive understanding and understanding of national security, to understand the significance of building overall national security concept, enhance the ability to protect personal information, prevent network security risks, team spirit, form the strong overall	R12

		situation concept and security consciousness, can contribute to the different positions, for their own sustainable development.	
Content	<p>"National Security Education for College Students" is an ideological and political theory course selected by school undergraduates. This textbook is based on the "Guidance Outline of National Security Education in Universities, Primary and Secondary Schools", combined with the reality and needs of national security education in ordinary colleges and universities. On the basis of science and rigor, it highlights the authority, standardization and practicality. The overall theoretical framework of this course is constructed on the basis of a comprehensive summary and review of General Secretary Xi Jinping on the general national view and its relevant important discourse. Course from the overall national security concept of political security, homeland security, military security, economic security, cultural security, social security, science and technology, network security, ecological security, resource security, nuclear security, overseas interests security, new security content, strive to promote students' national security consciousness, improve the ability to maintain national security, strengthen the responsibility of college students bear, enhancing national security lines. Through national security education and public security education, the national security awareness and self-protection ability of college students in the new era should be improved, and students' ideals and beliefs should be firmly strengthened, patriotism, moral cultivation and comprehensive quality should be strengthened.</p> <p>Chapter 1, Topic 1: An Overview of national security</p> <p>Chapter 2: Political Security and Cultural Security</p> <p>Chapter 3: Homeland Security and Military Security</p> <p>Chapter 4: Economic Security and Social Security</p> <p>Chapter 5: Technology Security and Network Security</p> <p>Chapter 6: Ecological Security and Resource Security</p> <p>Chapter 7: Biosafety and Nuclear Safety</p>		
Study and examination requirements and	<p>The final exam of the course is closed book with 120 minutes. The final exam results account for 70% of the total score, and class homework, homework, questions and discussion account for 30%.</p>		

exam format	
The media used	Computer, the online website
Read the list	<p>The Institute of Party History and Literature of the CPC Central Committee. Excerpt from Xi Jinping's discussion on the overall national security concept [G]. Central Academic Press, 2018.</p> <p>The Publicity Department of the CPC Central Committee. Thirty lectures on Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era [M]. Learning Press, 2018.</p> <p>Xi Jinping: The Governance of China, Volume 4, Foreign Languages Press, 2022.</p>

20 Aesthetic Education of College Students

Aesthetic Education of College Students

Course Title	Aesthetic Education of College Students		
Course Level	Aesthetic education for undergraduate students		
Course Code	03A21024		
The Module	Self-literacy improvement module		
School Term	The third semester		
Course Leader	Zhang Fan		
Teacher	○ ★ Xu Shaohong, ○ MAO Ziwei, ★ Ge Yi, ★ Yang Yuting, ★ Li Anji		
Language	Chinese		
Course Nature	Obligatory		
Teaching Method	Teacher center method (teaching, questioning, demonstration), interaction method (group design)		
Quantity Of Work	<p>Total class hours 60 hours (1 hour =1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 32 credit hours (2 credits * 16 credit hours, completed in 16 weeks, an average of 2 credit hours per week, including theoretical teaching, discussion, practice, etc.).</p> <p>2. Self-study: 28 credit hours (2 credits * 14 credit hours, completed in 14 weeks, with an average of 2 credit hours per week, including pre-class preview, online learning, after-class review, practice, homework, and test preparation).</p>		
Credit Hour	2 Credit		
Take the Course First	Nothing		
Learning Results and Their Corresponding Training Objectives	Curriculum learning results	Characterization	Supported learning objectives
	Learning results-1	Improve students 'artistic aesthetic appreciation ability, understand the basic concept of beauty, and promote the comprehensive	R8

		development of students' humanistic quality.	
	Learning results-2	Improve students' cognition of beauty, and help students to establish a correct world outlook, outlook on life and values.	R8
	Learning results-3	Carry forward national art, enhance patriotism and national pride;	R8
Content	<p>"University aesthetic education" course is a new era of colleges and universities with khalid ents fundamental, adhere to the "three complete education" and "five education simultaneously", the aesthetic education into the education teaching process, give full play to the aesthetic education of aesthetic education function, strengthen and improve the aesthetic education work, to carry forward the Chinese aesthetic spirit, improve students' aesthetic accomplishment, encourage the pursuit of beauty, create beauty, make it can become a new era of morality, intelligence, physique, beauty, the all-round development of socialist successors. The basic task of Aesthetic Education for College Students is to cultivate people's aesthetic consciousness and aesthetic viewpoint, improve the aesthetic ability and create the aesthetic ability of college students, so as to shape the aesthetic life realm and cultivate a harmonious and perfect personality.</p> <ol style="list-style-type: none"> 1. Introduction to aesthetic education and the beauty of music <ol style="list-style-type: none"> 1. Basic knowledge of aesthetics 2. Introduction of Western Musical Instruments 3. Introduction of ethnic instruments 2. The beauty of the movie <ol style="list-style-type: none"> 1. The development and type of shadow art 2. Aesthetic features of films 3. The beauty of painting <ol style="list-style-type: none"> 1. Introduction of Chinese painting 2. Introduction of famous works of Western oil painting 4. The beauty of life 		

	<ol style="list-style-type: none"> 1. Colorful ethnic costumes 2. Colorful ethnic diet
Study and examination requirements and exam format	The final examination of the course is in-class examination, and the final score of the course consists of the final examination and process assessment. Among them, the final exam results accounted for 60% of the total assessment, the usual performance (including attendance, discussion, etc.) accounted for 12%, the homework and practice (including in and after class) accounted for 16%, and the classroom performance accounted for 12%. Students must get a final score of more than 60 points to pass.
The media used	Computer, projector, Blackboard, PPT courseware, Online website, Video
Read the list	<ol style="list-style-type: none"> 1. The Aesthetic Education of College Students, edited by Su Hongyuan, Educational Science Press, 2023.4.ISBN: 9787519134471 2. Wang Yichuan edited the College Aesthetic Education. Beijing Normal University Press. In 2021. ISBN:9787303272105 3. Su Hongyuan lectured on South China University of Technology, MOOC platform of China University

21 The New Era of Labor Education

The New Era of Labor Education

Course title	The New Era of Labor Education
Course level	Undergraduate level
Course code	13A21003
The module	Self-literacy improvement module
School term	The first semester
Course leader	Shu-ying qiu
Teacher	☆ Gao Zhenyu ☆ Gong Yao Ben ☆ Gui Song its ☆ Xi Manting ☆ Xie Yong ☆ Yang Lin ☆ Ye Wei ☆ Chen Du ○ Jiang Yunqing ○ Li Jia ○ Liu Xiaoyan ○ Luo Wenbing ○ Wan Zhongying ○ Lu Yongxia ○ paint to protect
Language; borderism; lang.; parole; talk	The Chinese language; Chinese
Course nature	Compulsory course; Required course
Teaching method	Teacher-centered approach (teaching, questioning, argumentation, etc.); interaction approach; individualized approach; practice approach
Quantity of work	Total class hours 60 hours (1 hour =1 hour, 1 ECTS = 30 hours) 1. Teaching: 32 credit hours (2 credits * 16 credit hours, completed in 16 weeks, an average of 2 credit hours per week, including theoretical teaching, discussion, design, practice, etc.). 2. Self-study: 28 credit hours (2 credits * 14 credit hours, completed in 14 weeks, with an average of 2 credit hours per week, including pre-class preview, online learning, after-class review, practice, homework, and test preparation).
Credit hour	2 Credit
Take the course first	Nothing

	Curriculum learning results	Characterization	Supported learning objectives
Learning results and their corresponding Training objectives	Learning results-1	Carry out production labor and service labor in combination with disciplines and majors, accumulate professional experience, cultivate the creative labor ability and the legal labor consciousness of honesty and trustworthiness. Master the work process, operation precautions, establish the awareness of safety production.	R8
	Learning results-2	Through labor practice, we understand the important role of labor in human beings and social development, and the significance of labor in people's all-round development. Let students from living habits to learning habits, from academic performance to responsibility, from personal awareness to team spirit, good living habits bring a positive learning attitude, daily life and labor will help students to progress and grow.	R12
Content	<p>"New Era labor education" is a compulsory labor course for students of all undergraduate majors in our school. Through the teaching mode of offline experience, college students should strengthen the concept of labor, promote the spirit of labor, highlight the characteristics of The Times, and cultivate students' correct labor attitude, socialist labor values, positive labor spirit and good labor quality.</p> <p>Chapter 1 :Of labor practice content overview</p> <p>Chapter 2: Labor practice content display</p> <p>Chapter 3 :Labor practice operation process specification</p>		

	<p>Chapter 4: Labor practice group discussion</p> <p>Chapter 5: Group design of labor practice</p> <p>Chapter 6: Labor practice and operation</p>
Study and examination requirements and exam format	<p>The final examination of the course is the examination examination, and the final score of the course consists of the final examination and the process assessment. The results of the final exam accounted for 50% of the total assessment, and the usual performance (including attendance, discussion, etc.) in the process assessment accounted for 50%. Students must get a final score of more than 60 points to pass.</p>
The media used	Computers, projector, Blackboard, PPT courseware, Online website
Read the list	<p>1. Labor Education- -Project Design and Development, Zhu Huobing, edited by Li Xiaoyun, Hefei University of Technology Press</p>

22 Mental Health Education

Mental Health Education

Course title	Mental Health Education		
Course level	Undergraduate level		
Course code	13A21001		
The module	Self-literacy improvement module		
School term	The second semester		
Course leader	Feng-feng xu		
Teaching teachers	○ Yang Haoyu ○ Luo Huan ○ Zhou Yu ○ Xu Fengfeng ○ Xu Ze ○ Zhao Yun ★ Jiang Yuanyuan ★ Luo Huan ★ Xu Fengfeng ★ Xu Qiuping ★ Zhou Yu ★ Yang Haoyu		
Language	Chinese		
Course nature	Compulsory course; required course		
Teaching method, teaching time	Teacher center method (teaching, questioning, demonstration), teaching hours of 32 hours.		
Quantity of work	Total class hours 60 hours (1 hour =1 hour, 1 ECTS = 30 hours) 1. Teaching: 32 credit hours (2 credits * 16 credit hours, completed in 16 weeks, an average of 2 credit hours per week, including theoretical teaching, discussion and examination). 2. Self-study: 28 credit hours (2 credits * 14 credit hours, completed in 14 weeks, on average, 2 credit hours per week, including online courses (wisdom tree), practice, homework, review and preparation).		
Credit hour	2 Credit		
Take the course first	—		
Learning results and their corresponding training objectives	Curriculum learning results	Characterization	Supported learning objectives

	Learning results-1	Understand their own psychological characteristics and personality characteristics, to their own physical conditions, psychological conditions, behavior ability, correctly understand themselves, accept themselves, in the psychological problems can self-adjustment or seek help, actively explore the life state suitable for themselves and adapt to the society.	R9
	Learning results-2	Master self-exploration skills, psychological adjustment skills and psychological development skills. Such as learning development skills, environmental adaptation skills, stress management skills, communication skills, problem solving skills, self-management skills, interpersonal skills and career planning skills, etc. Master self-exploration skills, psychological adjustment skills and psychological development skills. Such as learning development skills, environmental adaptation skills, stress management skills, communication skills, problem solving skills, self-management skills, interpersonal skills and career planning skills, etc.	R10,R12
Content	<p>The course of Mental Health Education is a public course integrating knowledge transmission, psychological experience and behavior training. The purpose of the course is to make students clear the standards and significance of mental health, enhance self-awareness of mental health care and psychological crisis prevention, master and apply mental health knowledge, cultivate self-cognitive ability, interpersonal communication ability, self-regulation ability, effectively improve psychological quality, and promote students' all-round development.</p> <p>Chapter 1: An Introduction to the Mental Health of College Students</p> <p>Chapter 2 :Self-consciousness cultivation and Personality Development of College Students</p>		

	<p>Chapter 3: Learning Psychology and Career Planning</p> <p>Chapter 4: Emotional Management of College Students</p> <p>Chapter 5: Interpersonal Communication among College Students</p> <p>Chapter 6: Love psychology and love view of college students</p> <p>Chapter 7 :Stress management and frustration management for College students</p> <p>Chapter 8: Life education and Psychological Crisis Response of College students</p>
Study and examination requirements and exam format	The final exam of the course is a big assignment with 120 minutes. The final exam results account for 60% of the total score, and flipped classroom, group activities and class attendance account for 40%.
The media used	Computers, projector, Blackboard, PPT courseware, Online website
Read the list	<ol style="list-style-type: none"> 1. Wang Jun, Mental Health of College Students, Shanghai Jiao Tong University Press, 2019. 2. Liu Yong, Group Psychological Counseling and Training. Sun Yat-sen University Press. 00 May, 2018. 3. Liu Mei, Class Group Psychological Guidance Course ". Tsinghua University Press. In December, 2015.

Module Two Subject Basic Education Module

23 Higher Mathematics I

Higher Mathematics I

Course title	Higher Mathematics I		
Course level	Undergraduate level		
Course code	03A21005		
The module	Subject basic education module		
School term	The first semester		
Course leader	Tang Yugui		
Teaching teachers	○★ Tang Yugui, ★ Zhang Suting, ○ Deng Yong, ○ Lei Chengfeng		
Language	Chinese		
Course nature	Ompulsory course; required course		
Teaching method	Teacher-centered approach (lecturing, questioning, argumentation)		
Quantity of work	<p>Total duration: 112 hours (1 credit hour =1 hour, 1 ECTS = 28 hours)</p> <p>1. Teaching: 64 credit hours (4 credits * 16 credit hours, completed in 16 weeks, an average of 4 credit hours per week, including theoretical teaching, discussion, practice, etc.).</p> <p>2. Self-study: 48 credit hours (4 credits * 12 credit hours, completed in 12 weeks, on average, 4 credit hours per week, including preview before class, online learning, review after class, practice, homework, review and preparation).</p>		
Credit hour	4 Credit		
Take the course first	Noting		
Learning outcomes and their	Curriculum learning results	Characterization	Supported learning objectives

Correspondence train objective	Learning results-1	Train students to master unary calculus and multivariate function calculus, and to be able to apply mathematics, natural science, engineering foundation and professional knowledge to explain and solve engineering problems in the fields of electronic information, intelligent construction and mechanical manufacturing.	R1
	Learning results-2	Can apply the basic principles of mathematics, natural science and engineering science, identify and analyze the complex engineering problems of electronic information, intelligent construction, mechanical design and manufacturing in the form of literature, specifications, chart and text, and make technical and economic analysis and obtain effective conclusion.	R2
	Learning results-3	Electronic information engineering technicians and mechanical design and manufacturing technicians with a good mathematical foundation must have a serious and rigorous learning attitude.	R3,R4

Content	<p>Advanced Mathematics I is a required public basic course for all engineering majors. Through the study of this course, students can obtain the basic knowledge of unary calculus, multivariate function calculus, spatial vector and analytical geometry, and provide the necessary mathematical knowledge and common mathematical methods for learning the subsequent professional courses of various subjects. On the other hand, through teaching, students should have the ability to abstract and generalize problems, a certain logical reasoning ability, more skilled computing ability and self-study ability. For the future study of engineering mathematics, professional basic courses and related professional courses, to provide these courses with necessary concepts, theories, methods, operational skills and problem analysis and problem solving ability quality.</p> <p>Chapter 1: Function, limits, and continuous</p> <p>Chapter 2: Derivatives and Differations</p> <p>Chapter 3: Application of differential median value theorem and derivative</p> <p>Chapter 4: The indefinite integral</p> <p>Chapter 5: Fixed integral</p>
Study and examination requirements and exam format	<p>The final exam of the course is closed book with 120 minutes. The final exam results account for 70% of the total score, and class homework, homework, questions and discussion account for 30%.</p>
The media used	<p>Sub-blackboard, PPT courseware, Online website</p>
Read the list	<p>Wu Liangda, Practical and concise Course of Advanced Mathematics, Minzu University of China Press, 1996.5.</p> <p>Department of Mathematics, Tongji University, Higher Mathematics, Higher Education Press, 2014.7.</p> <p>Zhang Zhuokui, Wang Jinjin, Advanced Mathematics, Beijing University of Posts and Telecommunications Press, 2017.6.</p>

24 Higher Mathematics II

Higher Mathematics II

Course title	Higher Mathematics II		
Course level	Undergraduate level		
Course code	03A21006		
The module	Basic education module		
School term	The second semester		
Course leader	Tang Yugui		
Teaching teachers	○★ Tang Yugui, ★ Zhang Suting, ○ Yang Fei, ★ Lei Chengfeng, ★ Zhang Shichun, ★ Zhong Weijia, ★ Chen Jianmin, ○ Deng Yong, ○ Sun Bo		
Language	Chinese		
Course nature	Compulsory course		
Teaching method	Teacher-centered approach (lecturing, questioning, argumentation)		
Quantity of work	<p>Total duration: 112 hours (1 credit hour = 1 hour, 1 ECTS = 28 hours)</p> <p>1. Teaching: 64 credit hours (4 credits * 16 credit hours, completed in 16 weeks, an average of 4 credit hours per week, including theoretical teaching, discussion, practice, etc.).</p> <p>2. Self-study: 48 credit hours (4 credits * 12 credit hours, completed in 12 weeks, on average, 4 credit hours per week, including preview before class, online learning, review after class, practice, homework, review and preparation).</p>		
Credit hour	4 Credit		
Take the course first	Higher mathematics I		
Learning results and their corresponding training objectives	Curriculum learning results	Characterization	Supported learning objectives
	Learning results-1	Train students to master unary calculus and multivariate function calculus, and to be	R1

		able to apply mathematics, natural science, engineering foundation and professional knowledge to explain and solve engineering problems in the fields of electronic information, intelligent construction and mechanical manufacturing.	
	Learning results-2	Can apply the basic principles of mathematics, natural science and engineering science, identify and analyze the complex engineering problems of electronic information, intelligent construction, mechanical design and manufacturing in the form of literature, specifications, chart and text, and make technical and economic analysis and obtain effective conclusion.	R2
	Learning results-3	Electronic information engineering technicians and mechanical design and manufacturing technicians with a good mathematical foundation must have a serious and rigorous learning attitude.	R3,R4
Content	<p>Advanced Mathematics is a public basic course of science and engineering major. Through the teaching of this course, students acquire the basic theories and skills of binary function calculus, which lays a good foundation for the future study of engineering mathematics and related professional courses, and lays a solid foundation for further professional learning.</p>		
Study and examination requirements and exam format	Chapter 5:Fixed integral		

The media used	Electronic blackboard, PPT courseware, Online website
Read the list	<p>Wu Liangda, Practical and concise Course of Advanced Mathematics, Minzu University of China Press, 1996.5.</p> <p>Department of Mathematics, Tongji University, Higher Mathematics, Higher Education Press, 2014.7.</p> <p>Zhang Zhuokui, Wang Jinjin, Advanced Mathematics, Beijing University of Posts and Telecommunications Press, 2017.6.</p>

25 Linear Algebra A

Linear Algebra A

Curriculum name	Linear Algebra A		
Course Level	Undergraduate level		
Code	03A21009		
Affiliated Modules	Module on Basic Education in Academic Disciplines		
semester	Semester 3		
Programme Leader	Wenjie Lu		
lecturer	★○ Luo Cheng, ○ Yu Zhifeng, ★○ Mao Yuanfu, ○ Lu Wenjie, ★ Zhu Sijiao, ★ Qiu Ling, ★ Xu Jiamin		
language	Chinese		
Nature of the programme	compulsory course		
Teaching methods	Teacher-centred methods (lecturing, questioning, argumentation)		
workload	<p>Total 90 hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 48 hours (3 credits * 16 hours, completed in 16 weeks, an average of 3 hours per week, including theoretical teaching, discussion and examination).</p> <p>2. Self-study: 42 hours (3 credits * 14 hours, to be completed in 14 weeks, with an average of 3 hours per week, including pre-course preparation, online learning, post-course revision, exercises, homework, review and preparation for exams).</p>		
credits	3 credits		
prerequisite course	Advanced Mathematics I, Advanced Mathematics II		
Learning outcomes and their corresponding training objectives	Programme learning outcomes	descriptions	Learning objectives supported
	Learning outcomes - 1	Ability to apply mathematics, natural sciences, engineering	R1

		<p>fundamentals and professional knowledge to explain and solve complex problems in the areas of civil engineering, electrical engineering and computing</p>	
	<p>Learning outcomes - 2</p>	<p>Have the basic knowledge of mathematics and science, computers, engineering and mechanics, as well as professional knowledge and skills required to engage in professional work; be able to apply the basic principles of mathematics, natural sciences and engineering sciences to identify and analyse the problems in the fields of electronic engineering, mechanical engineering and civil engineering by using formulas, drawings, charts and words; be able to comprehensively apply the literature, norms, standards, etc. to conduct technical and economic analyses and obtain valid conclusions.</p>	<p>R2, R3</p>
	<p>Learning outcomes - 3</p>	<p>Have strong socialist beliefs, mastery of the fundamentals of engineering science, engineering expertise, and a solid grasp of the fundamentals and expertise of mathematics, natural sciences, and mechanical engineering.</p>	<p>R2, R4</p>

<p>element</p>	<p>The course "Linear Algebra A" focuses on linear theory and methods in finite-dimensional linear spaces, with strong logic, abstraction and wide applicability. Especially in today's increasingly popular computer, solving large systems of linear equations and finding the eigenvalues of matrices have become frequent problems for technicians. Therefore, this course is a closely related to the actual course, the methods introduced are widely used in various disciplines. Through the study of this course, students master the basic concepts and methods of linear algebra, master determinants, matrices, vector groups, systems of linear equations and other related knowledge, master the eigenvalues and eigenvectors of the solution, and the use of matrices to solve some simple real-world problems, to enhance the students' ability to think abstractly and reason logically, and to cultivate the students' ability to comprehensively analyse and solve problems, in order to lay a good foundation for future learning. To lay a good foundation for future learning.</p> <p>Chapter 1. Determinant</p> <p>Chapter 2 Matrices and their operations</p> <p>Chapter 3 Vectors and Systems of Linear Equations</p> <p>Chapter 4 Eigenvalues and Eigenvectors of Matrices</p>
<p>Study and examination requirements and examination format</p>	<p>The final exam for the course is closed-book, 120 minutes long, and is worth 70 per cent of the total grade, and 30 per cent of the classroom assignments, out-of-class work, questions, and discussions.</p>
<p>Media used</p>	<p>Electronic blackboard, PPT courseware, online website</p>
<p>reading list</p>	<ol style="list-style-type: none"> 1. Aining Fu, Na Wang, Yan Feng, Linear Algebra, Dalian University of Technology Press, 2010.8. 2. Linear Algebra, Shanghai Jiaotong University, 2008.8. 3. Linear Algebra Exercise Course Tutorial, Suzhou University Press, 2006.4.

26 Probability and Mathematical Statistics A

Probability and Mathematical Statistics A

Curriculum name	Probability and Mathematical Statistics A		
Course Level	Undergraduate level		
Code	03A21011		
Affiliated Modules	Module on Basic Education in Academic Disciplines		
semester	Semester 4		
Programme Leader	Yang Li		
lecturer	○Yang Li, ○Lu Wenjie, ○★Mao Yuanfu, ★Luo Cheng, ○Yu Toifeng, ○★Qiu Ling, ★Xu Jiamin		
language	Chinese		
Nature of the programme	compulsory course		
Teaching methods	Teacher-centred methods (lecturing, questioning, argumentation)		
workload	<p>Total 90 hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 48 hours (3 credits * 16 hours, to be completed in 16 weeks, with an average of 3 hours per week, including theoretical teaching, discussions and exercises).</p> <p>2. Self-study: 42 hours (3 credits * 14 hours, to be completed in 14 weeks, averaging 3 hours per week, including pre-course preparation, online learning, exercises, homework, review and preparation for exams).</p>		
credits	3 credits		
prerequisite course	higher mathematics		
Learning outcomes and their corresponding training objectives	Programme learning outcomes	descriptions	Learning objectives supported
	Learning outcomes - 1	Ability to apply basic principles of mathematics, natural and	R1

		engineering sciences to identify, express, and analyse complex engineering problems through literature research	
	Learning outcomes - 2	Be able to design solutions to complex engineering problems, design systems, units (components) or processes to meet specific needs, and be able to demonstrate a sense of innovation in the design process, taking into account social, health, safety, legal, cultural and environmental factors.	R2
	Learning outcomes - 3	The ability to investigate complex engineering problems based on scientific principles and methods, including designing experiments, analysing and interpreting data, and synthesising information to reach sound and valid conclusions.	R3
	Learning outcomes - 4	Be able to understand and evaluate the impact of professional engineering practice on environmental and social sustainability in response to complex engineering problems.	R4
element	<p>Probability Theory and Mathematical Statistics A is an important basic theoretical course for undergraduate science and engineering majors, and it is a mathematical discipline that studies the objective laws of random phenomena, focusing on the basic concepts, methods and theories of probability theory. Through the study of this course, students not only master the basic concepts and theories of probability theory in a more systematic way, but also learn the basic research skills of stochastic mathematics, initially master the basic ideas and methods of dealing with stochastic phenomena, and cultivate the basic skills and qualities of students to use probability statistics to analyse,</p>		

	<p>solve and deal with the actual uncertainty problems.</p> <p>Chapter 1 Random Events and Probability</p> <p>Chapter 2 Random variables and their distributions</p> <p>Chapter 3 Multidimensional Random Variables and Their Distributions</p> <p>Chapter 4 Numerical Characteristics of Random Variables</p> <p>Chapter 5 The Law of Large Numbers and the Central Limit Theorem</p> <p>Chapter 6 Basic concepts of mathematical statistics</p>
Study and examination requirements and examination format	The final exam for the course is closed-book, 120 minutes long, and is worth 70 per cent of the total grade, and 30 per cent of the classroom assignments, out-of-class work, questions, and discussions.
Media used	Electronic blackboard, PPT courseware, online website
reading list	<p>5. Zheng Yi, Wang Yumin, Feng Baocheng, Probability Theory and Mathematical Statistics, Dalian University of Technology Press, 2015.8</p> <p>6. Qichen Li, Probability Theory and Mathematical Statistics, Nanjing University Press, 2010.8</p>

27 University Physics I

University Physics I

Curriculum name	University Physics I		
Course Level	Undergraduate level		
Code	03A21013		
Affiliated Modules	Module on Basic Education in Academic Disciplines		
semester	Semester 2		
Programme Leader	Peng Rongrong		
Teachers	Gong Ling, Qin Meibao, Li Zemin, Meng Ruiying, Lai Zhentuan		
language	Chinese		
Nature of the programme	a required course		
Teaching methods	Teacher-centred approach (lecturing, questioning), practical approach (laboratory learning)		
workload	<p>Total 90 hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 48 hours (3 credits * 16 hours, completed in 12 weeks, an average of 4 hours per week, including theoretical teaching, practical teaching, discussions, exercises, etc.).</p> <p>2. Self-study: 42 hours (3 credits * 14 hours, to be completed in 14 weeks, averaging 3 hours per week, including pre-class pre-study, post-class review, exercises, homework, and preparation for exams).</p>		
credits	3 credits		
prerequisite course	higher mathematics		
Learning outcomes and their corresponding training objectives	Programme learning outcomes	descriptions	Learning objectives supported
	Learning outcomes - 1	To acquire a grasp of the basic concepts and research content of physics, and a comprehensive	R1

		<p>understanding of the historical and modern development of its classifications; to become familiar with new technological developments in physics, to understand the impact of these new technologies on physics, and to appreciate the interaction between advances in new technologies and the development of university physics as a programme.</p>	
	<p>Learning outcomes - 2</p>	<p>Students are trained in logical thinking, abstract thinking and the ability to analyse and solve problems, and are able to use emerging physical technology tools and methods to solve practical problems, laying the necessary physical foundation for further study of professional knowledge, mastery of engineering technology and updating of new knowledge.</p>	<p>R2</p>
<p>element</p>	<p>University Physics I is an important basic course for our undergraduate students majoring in electronic information engineering, which mainly includes the theoretical parts of mechanics and thermology and related experiments in university physics. On the one hand, the course provides students with essential basic knowledge of physics and common physical methods for learning subsequent courses and solving practical problems; on the other hand, it enables students to learn the scientific method of thinking and the method of researching problems. This course is connected with the related applications of electronic information engineering, and strengthens the training of basic knowledge and basic methods with more practical applications. Through various teaching links, students will have a more complete theoretical foundation of physics and a more skilful ability to use physical knowledge to solve practical problems and innovation ability.</p> <p>Chapter 1 Kinematics of Plasmas</p> <p>Chapter 2 Dynamics of Masses</p> <p>Chapter 3 Fundamentals of Rigid Body Mechanics</p> <p>Chapter 4 Molecular Dynamics Theory</p>		

	<p>Chapter 5 Fundamentals of Thermodynamics</p> <p>Chapter 6 Theoretical Foundations of University Physics Experiments and Experiments</p>
Study and examination requirements and examination format	<p>The final examination for the course is a closed-book examination of 120 minutes duration. The final grade of the course consists of the final examination and the process assessment. The final exam constitutes 60% of the overall grade, while the process assessment consists of 40% attendance, 30% homework, 20% lab report, and 10% regular performance. Students must obtain a final grade of 60 or above to pass the course.</p>
Media used	<p>Computer, projector, blackboard, PPT courseware, online website</p>
reading list	<ol style="list-style-type: none"> 1, University Physics Course, edited by Chang Wenli, Shanghai Jiao Tong University Press, 1st edition, February 2014, 4th printing, 2023, ISBN: 978-7-313-10882-1; 2. University Physics Experiment Tutorial, edited by Peng Rongrong, Meng Ruiying, Gao Jiali, Beijing University of Posts and Telecommunications Press, 1st edition, November 2022, ISBN No.: 978-7-5635-6802-4 3. General Physics (Seventh Edition), edited by Cheng Shou-su, Higher Education Press, published in 2016, ISBN: 9787040200591; 4. China University MOOC, University Physics course, Beijing University of Technology, Liu Zhaolong, Feng Yanquan, Shi Hongxia.

28 University Physics II

University Physics II

Curriculum name	University Physics II		
Course Level	Undergraduate level		
Code	03A21014		
Affiliated Modules	Module on Basic Education in Academic Disciplines		
semester	Semester 3		
Programme Leader	Peng Rongrong		
Teachers	Gong Ling, Qin Meibao, Li Zemin, Meng Ruiying, Lai Zhentuan		
language	Chinese		
Nature of the programme	a required course		
Teaching methods	Teacher-centred methods (lecturing, questioning); practical methods (laboratory learning, exercises)		
workload	<p>60 hours total (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 32 hours (2 points * 16 hours, to be completed in 16 weeks, averaging 2 hours per week, including lectures, questions, laboratory studies, and exercises).</p> <p>2. Self-study: 28 hours (2 credits * 14 hours, to be completed in 14 weeks, averaging 2 hours per week, including including pre-class pre-study, post-class review, exercises, homework, and preparation for exams).</p>		
credits	2 credits		
prerequisite course	University Physics I		
Learning outcomes and their corresponding training objectives	Programme learning outcomes	descriptions	Learning objectives supported
	Learning outcomes - 1	Students will acquire basic knowledge of mathematics, natural sciences and computers with a	R1

		<p>multi-disciplinary background in mechanical engineering. Through the study of University Physics II, students will be able to understand and apply basic physical concepts such as electricity and electromagnetism, thus providing a theoretical foundation for electronic information studies.</p>	
	<p>Learning outcomes - 2</p>	<p>Students are able to apply the basic principles of mathematics, natural sciences and electronic information to identify, express and analyse particular problems in the field of information, and to obtain valid conclusions about the causes, influences and solutions of the problems. Through physics experiments and problem solving, students develop logical thinking and analytical skills, e.g., experimentally verifying the laws and principles of physics and enhancing their ability to solve practical engineering problems.</p>	<p>R2, R4</p>
	<p>Learning outcomes - 3</p>	<p>Students will be able to properly understand the importance of independent and lifelong learning, and have the ability to learn continuously and adapt to development. Through the University Physics II programme, students will develop good study habits and self-directed learning skills, maintain the spirit of exploration for new knowledge, for</p>	<p>R12</p>

	example, through completing extra-curricular experiments and projects on their own, and develop the motivation and ability for continuous learning.	
element	<p>It focuses on electromagnetism, mechanical vibration and mechanical waves, fluctuating optics, and university physics experiments, from which knowledge of vectors and differentiation permeates. The prerequisite course for the University Physics II programme is University Physics I, which solves complex physical problems in the programme with calculus ideas in higher mathematics. The course carries the important responsibility of imparting knowledge of physics, bridging professional courses, and cultivating students' scientific literacy. The theoretical system of physics is perfect and systematic. The formulation of physical ideas, the expressions of laws and theorems, and the scientific treatment of problems form a perfect theoretical system, which is of great significance to students' learning in subsequent courses.</p> <p>Chapter 1: Electrostatic Fields</p> <p>Chapter 2 Operating magnetic fields</p> <p>Chapter 3 Changing Electromagnetic Fields</p> <p>Chapter 4 Mechanical Vibrations and Mechanical Waves</p> <p>Chapter 5 Wave Optics</p> <p>Chapter 6 University Physics Experiments</p>	
Study and examination requirements and examination format	<p>The final examination for the course is a closed-book examination of 120 minutes duration. The final grade of the course consists of the final examination and the process assessment. The final exam score is 60% of the total assessment, while the process assessment consists of 20% for regular performance (including attendance and performance, etc.) and 20% for assignments and practicals (lab reports). Students must obtain a final grade of at least 60 points to pass the course.</p>	
Media used	Computer, projector, blackboard, PPT courseware, online website	

reading list	<p>1, General Physics (7th edition), Cheng Shou-su, Jiang Zhi-yong, Higher Education Press, May 2016, 7th edition, ISBN 978-7-04-042919-0</p> <p>2, New College Physics Course (1st Edition), Huang Yibin, Gong Yongqing, Science Press, 2017, ISBN 978-7-03-051140-9</p> <p>3. University Physics Experiments, Zhang Xiaobo, Science Press, 2011, ISBN 978-7-03-031863-3</p>
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29 Functions of a Complex Variable

Functions of a Complex Variable (math.)

Curriculum name	Functions of a Complex Variable (math.)		
Course Level	Undergraduate level		
Code	03A21016		
Affiliated Modules	Module on Basic Education in Academic Disciplines		
semester	Semester 3		
Programme Leader	Luo Cheng (1928-), Mao Zedong's fourth wife and leader of the Gang of Four		
lecturer	Luo Cheng, Yu Toifeng, Mao Yuanfu		
language	Chinese		
Nature of the programme	compulsory course		
Teaching methods	Teacher-centred methods (lecturing, questioning, argumentation)		
workload	<p>60 hours total (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 32 hours (2 credits * 16 hours, to be completed in 16 weeks, with an average of 2 hours per week, including theoretical teaching, discussions and exercises).</p> <p>2. Self-study: 28 hours (2 credits * 14 hours, to be completed in 14 weeks, averaging 2 hours per week, including pre-class pre-study, online learning, post-class revision, exercises, homework, review and preparation for exams).</p>		
credit	2 credits		
prerequisite course	--Advanced Mathematics		
Learning outcomes and their corresponding training objectives	Programme learning outcomes	descriptions	Learning objectives supported
	Learning outcomes - 1	To understand and master the basic concepts, basic theories and basic methods of complex numbers and	R1

		functions of complex variables, analytic functions, integrals of functions of complex variables, Cauchy's integral formulae, the complex closed circuit theorem, complex series, power series, Fourier series and their transformations, and to lay a solid theoretical foundation for further study of specialised courses;	
	Learning outcomes - 2	The ability to generalise differentiation and integration from the real to the complex number domain and to understand and appreciate the connections and differences between the two, as well as the ability to solve problems using complex analysis.	R2
	Learning outcomes - 3	A conscientious and rigorous approach to learning that is essential for EITs with a good foundation in mathematics.	R3
	Learning outcomes - 3	Logical reasoning and abstract thinking skills have improved.	R4
element	<p>Functions of Complex Variables is an important basic course for Electronic and Information Engineering, which is the study of the analytical process of complex independent variables as complex-valued functions. The main contents include complex numbers and functions of complex variables, analytic functions, integrals of functions of complex variables, Cauchy's integral formula, complex closed circuit theorem, complex series, power series, Fourier series and their transformations. It is followed by relevant specialised courses in electronics and electricity. It is closely linked to courses in electronics and automatic control, and is a powerful tool for solving problems such as electromagnetism, thermodynamics, vibration, elasticity theory, and spectrum analysis.</p> <p>Chapter 1 Complex Numbers and Functions of Complex Variables</p>		

	<p>Chapter 2. Analysing Functions</p> <p>Chapter 3 Complex Integration of functions of a complex variable</p> <p>Chapter 4 Solving Power Series Representation of Analytic Functions</p> <p>Chapter 5 Retention and its applications</p> <p>Chapter 6 Commonality Mapping</p> <p>Chapter 7 Fourier Fourier transform</p> <p>Chapter 8: La Bras Transforms</p>
Study and examination requirements and examination format	The final exam for the course is closed-book, 120 minutes long, and is worth 70 per cent of the total grade, and 30 per cent of the classroom assignments, out-of-class work, questions, and discussions.
Media used	Electronic blackboard, PPT courseware, online website
reading list	<p>7. Gejun Bao, Yuming Xing, Yunying Gai, editors, Functions of Complex Variables and Integral Transforms, Science Press, 2013.3</p> <p>8. Qi-Qin Fang, Tutorial on Functions of Complex Variables, Peking University Press, 2019.5.</p> <p>9. Yuchuan Zhong, Theory of Functions of Complex Variables, Higher Education Press, 2021.12.</p>

30 Introduction to Artificial Intelligence Technology

Introduction to Artificial Intelligence Technology

Curriculum name	Introduction to Artificial Intelligence Technology		
Course Level	Undergraduate level		
Code	05A21002		
Affiliated Modules	Module on Basic Education in Academic Disciplines		
semester	Semester 2		
Programme Leader	long-tail pheasant		
lecturer	Zhai Qing, Kang Xiaohua, Lei Qian		
language	Chinese		
Nature of the programme	compulsory course		
Teaching methods, hours of instruction	Teacher-centred methods (lecturing, questioning, argumentation)		
workload	<p>Total 30 hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 24 hours (1 credit * 24 hours, completed in 12 weeks, an average of 2 hours per week, including theoretical teaching, discussion and examination).</p> <p>2. Self-study: 6 hours (1 credit * 6 hours, to be completed in 12 weeks, averaging 0.5 hours per week, including exercises, assignments, and review for exams).</p>		
credits	1 credit		
prerequisite course	--		
Learning outcomes and their corresponding training objectives	Programme learning outcomes	descriptions	Learning objectives supported
	Learning outcomes - 1	Students should be able to develop an in-depth understanding of the basic concepts, principles and techniques of artificial intelligence, including neural networks,	R1

		classification algorithms, and machine learning. Students should be able to explain how these techniques work and their application in solving real-world problems.	
	Learning outcomes - 2	Students should be able to grasp the practical applications of AI technologies in different fields (e.g., natural language processing, computer vision, intelligent robotics, etc.). Students should be able to analyse the strengths and challenges of these applications and suggest improvements.	R2
	Learning outcomes - 3	To develop students' creative and critical thinking skills so that they can apply the knowledge and skills they have learnt about artificial intelligence to solve complex practical problems. Students should be able to think independently, analyse problems, propose solutions and implement them effectively. In addition, students should have the ability to work in teams and be able to play their part in solving problems together.	R3, R4
element	Introduction to Artificial Intelligence Technology is a public basic theory course for undergraduate majors in the School of Information and Artificial Intelligence, as well as an overview and general course. Artificial Intelligence is an important content in computer science has become the core technology in the development of computer technology and many high-tech products. With the victory of Alpha Dog over human Go masters, artificial intelligence is getting hotter and hotter, artificial intelligence is a simulation of human intelligence to solve problems, and has a very wide range of applications in almost all fields. This course mainly introduces the overview of AI, the general principles and basic ideas of AI problem solving as well as some cutting-edge contents, providing students with the most basic introductory knowledge of AI technology and related problems, and laying the foundation for further study and		

	<p>research on AI theory and application. Through the study of this course, students can have a preliminary understanding of the development overview, basic principles and application areas of artificial intelligence, have a certain mastery of the main technologies and applications, inspire students' interest in artificial intelligence, and cultivate the ability of knowledge innovation and technological innovation. In the teaching process should be emphasised to enlighten students' logical thinking method, establish students' logical thinking ability, give students enough imagination space, and cultivate students' innovative thinking ability; in the process of analysis and design, improve students' theoretical and practical skills, and effectively link theory to practice, so as to lay a solid foundation for the subsequent courses. At the same time, in the knowledge transfer and ability cultivation, we strengthen the objectives of the course's ideology and politics, cultivate students' design thinking and systematic thinking, and improve their abilities of innovation and entrepreneurship, independent learning, communication and consultation, and collaborative management, so as to equip them with professionalism and professional ethics.</p> <p>Chapter 1 Introduction</p> <p>Chapter 2 Philosophical Foundations of Artificial Intelligence</p> <p>Chapter 3 Foundations of Brain and Cognitive Science</p> <p>Chapter 4 Artificial Neural Networks</p> <p>Chapter 5: Machine Learning</p> <p>Chapter 6 Perceptual Intelligence</p> <p>Chapter 7 Cognitive Intelligence</p> <p>Chapter 8 Linguistic Intelligence</p> <p>Chapter 9: Robots</p> <p>Chapter 10 Hybrid Intelligence</p> <p>Chapter 11 Brain-like Computing</p> <p>Chapter 12 Artificial Intelligence and Social Development</p>
<p>Study and examination requirements and examination format</p>	<p>The final exam for the course is a large assignment of 120 minutes, with 70 per cent of the total mark for the final exam and 30 per cent of the total mark for the usual grades (30 per cent for attendance, 30 per cent for assignments, 20 per cent for discussions, and 20 per cent for mutual assessment in the group).</p>
<p>Media used</p>	<p>Computers, projectors, amplifiers, whiteboards</p>

reading list	<ol style="list-style-type: none"><li>1. Artificial Intelligence-The Disruptive Technology that Changes the Future, Zhou Zhimin, People's Posts and Telecommunications Publishing House, August 2017, ISBN: 978-7-115-46038-7<li>2. Introduction to Artificial Intelligence, Wang Wanliang, Higher Education Press, 2017, 4th edition, 9787040479843
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Module Three The Computer Technology Module

31 University Computer Foundation

College Computer Fundamentals

Curriculum name	College Computer Fundamentals		
Curriculum level	Undergraduate level		
Curriculum code	03A21018		
Subordinate module	Computer Technology Module		
Semester	The first semester		
Curriculum director	Chen Neng		
Lecturer	Wu Na, Xie Shujuan, Cao Yanxia		
Language	Chinese		
Curriculum nature	Compulsory		
Teaching methods	Teacher-centered method (teaching, questioning), individual-targeted method (programmed teaching, computer teaching), practical method (practices)		
Workload	<p>Total class hours: 50 hours (1 credit hour=1 hour), 1 ECTS=25 hours</p> <p>1. Contact time: 48 credit hours (2 credit points*24 credit hours, finished in 16 weeks, 3 hours per week on average, including theoretical teaching, practical teaching, discussing, etc.).</p> <p>2. Self-study time: 2 credit hours (2 credit points*1 credit hour, finished in 2 weeks, 1 hour per week on average, preparing for examination).</p>		
ECTS credits	2 credit points		
Recommended prerequisite	---		
Learning outcomes and their	Course Learning Outcome (CLO)	Description	Supported Intended Learning

corresponding ILOs			Objective (ILOS)
	CLO-1	Engineering knowledge and problem analysis: With abstract and automatic calculation thinking ability, familiar with the principle of computer system, able to apply it to solve daily computer hardware and software problems, reflecting the basic practical ability.	R1,R2
	CLO-2	Design/develop solutions: acquire basic document layout skills; be able to implement graphic editing on demand, reflecting the sense of innovation, and taking into account cultural and environmental factors.	R3
	CLOe-3	Research: master the basic experimental methods and data processing methods, and be able to collect and organize experimental data correctly.	R4
	CLO-4	Use of modern tools: be able to develop appropriate technologies and resources, and use software development tools to complete data acquisition, processing and sharing.	R5
	CLO-5	Project report: be able to use PowerPoint software for project publicity demonstration, report speech, have a certain performance ability and expression ability.	R11
	CLO-6	Lifelong learning: continuous learning and lifelong learning ability.	R12

Content	<p>“University Computer Foundation” is a basic course in the general education platform of all undergraduate majors, which has strong operability and practical application. Through knowledge linking, task analysis and task implementation, students’ basic computer skills, practical operation ability and vocational ability are cultivated and improved. In delivering lessons, lecturers of this course combine theory and practice to cultivate and improve students’ basic computer skills, practical operation and vocational ability through knowledge linking, task analysis and task implementation; And through a number of comprehensive application cases, the computer operation skills of students will be finally improved; students’ interest in the study and research of computer courses enhanced. This course learn from and introduce new ideas, technologies and methods to computer science in their respective majors, to use computer application software at a higher level, and cultivate applied talents with innovative spirit and practical ability, laying the foundation for students to become qualified professionals in the future.</p> <p>Unit I Knowing Computer</p> <p>Unit II Graphic Editing</p> <p>Unit III Electronic Sheets</p> <p>Unit IV PowerPoint</p> <p>Unit V Computer network and Internet Applications</p>
Study and examination requirements and forms of examination	<p>The final exam of this course is closed-book, which lasts 120 minutes. The final grade in this curriculum is composed of final exam accounting for 60% and process assessment 40%. Among them, daily performances in the process assessment (including attendance, discussion, etc.) accounts for 28%, take-home assignments and practice (including in-class and out-of-class) 12%. Students must obtain a final grade of 60 or more to pass.</p>
Media employed	<p>Computer, projector, PPT courseware, and online websites</p>
Reading list	<ol style="list-style-type: none"> 1. Fundamentals of Computer Application (Windows 10+Office 2016), Lian Yonghua, Zhan Bin, Chen Neng, Aviation Industry Press, 2021, 1st edition, ISBN: 978-7-516-51956-2 2. Basic Training Course of Computer Application (Windows 10+Office 2016), Li Jian, Zhang Benlin, Xia Qun, Aviation Industry Press, 2021, 1st edition, ISBN: 978-7-516-51957-3

	3. School-level Quality Course of Nanchang Institute of Technology: “University Computer Basics”
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32 C Language Programming

C Language Programming

Curriculum name	C Language Programming
Curriculum level	Undergraduate level
Curriculum code	03A21019
Subordinate module	Computer Technology Module
Semester	The second semester
Curriculum director	She Jiali
Lecturer	She Jiali, Wuna, Xie Shujuan, Jin Wanli
Language	Chinese
Curriculum nature	Compulsory
Teaching Methods	Teacher-based method (teaching, questioning, practicing)
Workload	<p>Total class hours: 112 hours (1credit hour=1hour), 1ECTS=28hours</p> <p>1. Contact time: 64 credit hours (4credits*16credit hours, finished in 16 weeks, 4 hours per week on average, including theoretical teaching, discussing, and examination.).</p> <p>2. Self-study time: 48 credit hours (2credits*1credit hour, finished in 16 weeks, 3 hour per week on average, including online course Xuexitong, practices, take-home assignments, and examination preparation).</p>
ECTS credits	4 credit points

Recommended prerequisite	College Computer Fundamentals		
Learning outcomes and the corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOS)
	CLO-1	Master the basic knowledge of C program data types, operators, expressions and basic syntax of computer program design structure; master function definition and call, function call and parameter passing mechanism, nested and recursive syntax form; master the definition and use of array format, data storage, processing, analysis and transfer methods; master pointer memory management and data manipulation methods.	R1,R12
	CLO-2	Be able to use the knowledge to identify and analyze grammatical and semantic errors in program design and coding; analyze and debug logical errors in sequence, selection and loop programming structure; analyze and interpret data transfer and impact between modules during program design and operation.	R2
	CLO-3	Choose sequences, selections, and cycle programming structures to solve actual problems in the project according to actual needs; be able to use arrays for basic applications in numerical computation, data statistics, sorting and data retrieval;	R3,R4

		use functions to design structured program.	
	CLO-4	Learn to use VC2010 integrated environment for program project coding and design; enhance the ability to solve medium complex engineering problems as well as innovation consciousness.	R5,R11,R12
Content	<p>“C Language Programming” is a public basic course for science and technology undergraduates in our university, belonging to the theoretical knowledge course group. This course is one of the main tools for programming teaching and computer software development. It analyzes the basic principles of computer programming, the basic methods and processes of using computers to solve practical problems, emphasizes the combination of theory and practice, and trains students to master the basic methods of programming and the thinking methods and application abilities of using computers to deal with problems, providing a solid theoretical foundation for the development of software and hardware in the engineering field.</p> <p>Chapter I Overview of C Language Programming</p> <p>Chapter II° Data Types, Operators, and Expressions</p> <p>Chapter III° Sequential Structure Programming</p> <p>Chapter IV° Select Structure Programming</p> <p>Chapter V° Loop Structure Programming</p> <p>Chapter VI° Arrays</p> <p>Chapter VII° Functions</p> <p>Chapter VIII° Pointer</p> <p>Chapter IX Structural Body, Union, Bit Field and Enumeration Type</p> <p>Chapter XFiles</p> <p>Chapter XI° Basic Knowledge of C++ Object-oriented Programming</p> <p>Chapter XII° Programming Development of VC++ Windows Interface</p>		
Study and examination requirements and forms of examination	<p>The final exam of this course is practical and lasts 120 minutes. The final grade in this curriculum is composed of a final examination accounting for 60% of the total grade, and the class work, take-home assignments, questions, discussions, etc., account for 40%.</p>		

Media employed	Computer, projector, blackboard, PPT courseware, and online websites
Reading list	<ol style="list-style-type: none"> 1. Zhou Xin, Wang Xite. C Language Programming Course. University of Electronic Science and Technology of China Press, 2018. 2. Wang Xite, Zhou Xin. C Language Programming on Computer Guidance and Exercises. University of Electronic Science and Technology of China Press, 2018. 3. Tan Haoqiang. C Language Programming (3rd edition). Tsinghua University Press, 2016. 4. Lu Shoudong. C Programming Example Course. Tsinghua University Press, 2016.

33 Visual C++ Programming

Visual C++ Programming

Curriculum name	Visual C++ Programming		
Curriculum level	Undergraduate level		
Curriculum code	05A21087		
Subordinate module	Computer technology module		
Semester	The fifth semester		
Curriculum Director	Qiu Xiulan		
Lecturer	Qiu Xiulan, Zeng Jun		
Language	Chinese		
Curriculum nature	Compulsory		
Teaching methods	Teacher-centered methods (teaching, questioning, demonstrating), practical methods (studying in laboratory, practicing)		
Workload	<p>Total class hours: 120 hours (1credit hour=1hour), 1ECTS=30hours</p> <p>1. Contact time: 64 credit hours (4 credit points*16 credit hours, finished in 16 weeks, 4 hours per week on average, including theoretical teaching, discussing, and examination.).</p> <p>2. Self-study time: 56 credit hours (4 credit points*14credit hour, finished in 14 weeks, 4 hour per week on average, including online course Mooc, practices, take-home assignments, review and examination preparation).</p>		
ECTS credits	4 credit points		
Prerequisite course	Fundamentals of Programming, C++ Programming, Data Structure, Principles of Computer Composition		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOS)
	CLO-1	Master basics of VC++ programming: Students will	R1

		understand and use VC++ basic syntax, data types, control structures, functions and other basic programming elements, and write simple VC++ programs, and perform basic debugging and testing.	
	CLO-2	Familiar with object-oriented programming ideas: Students will deeply understand of object-oriented programming concepts, including types, objects, inheritance, encapsulation, and polymorphism, etc., and be able to apply these concepts to improve code reusability and maintainability.	R2
	CLO-3	Gain Windows application development ability: Students will master the basic process and methods of using VC++ for Windows application development, including interface design, event processing, file operation, network communication, etc., and develop Windows applications with certain functions, and have the potential to further study and explore complex application development; Students will have the ability of independent learning and continuous learning, be able to continuously discover and solve problems in the learning process, and be able to track and understand the latest development of VC++ and related technologies, and constantly update and improve their	R3,R4

		knowledge and skills.	
Content	<p>“Visual C++ Programming” introduces the basic principles and methods of Visual C++ object-oriented programming, including C++ programming, Visual C++ programming and Visual C++ advanced programming three parts. According to the Visual C++ programming environment → C++ language → application wizard → document/view structure → dialog box and control → MFC → graphic processing → programming in-depth order design teaching content. Aiming at the four difficulties of Visual C++ programming course teaching: the object-oriented mechanism of C++ language, the huge function of MFC class library, the complexity of Windows programming and the transparency of application framework, the course is accurate, concise and simple in the description of basic concepts, principles and methods. It enables students to master the basic methods of common data structures, algorithms and object-oriented programming, and to describe medium-sized problems and their solutions in computer language, which provides powerful technical support for students’ future innovative experiments, graduation designs and scientific research.</p> <p>Chapter I Preliminary Understanding of C++</p> <p>Chapter II C++ Extension of the Basic C Syntax</p> <p>Chapter III Types and Objectives</p> <p>Chapter IV Inheritance and Encapsulation</p> <p>Chapter V Polymorphism and Virtual Functions</p> <p>Chapter VI Operator Overloading and Type Templates</p> <p>Chapter VII Circulation</p> <p>Chapter VIII MFC Programming</p> <p>Chapter IX Database Programming</p> <p>Chapter X Graphic Rendering</p> <p>Chapter XI Comprehensive Practical Training</p>		
Study and examination requirements and forms of examination	<p>The final exam of this course is practical and lasts 120 minutes. The final grade in this curriculum is composed of a final examination accounting for 60%, and the class work, take-home assignments, questions, discussions, etc., account for 40%.</p>		

Media employed	Computer, projector, blackboard, PPT courseware, and online websites
Reading list	<ol style="list-style-type: none"> <li>1. Visual C++ Object-Oriented Programming (4th Edition), Yujian Wang, Tsinghua University Press, 2018, ISBN: 9787302498544 <li>2. C++ Object-Oriented Programming, Dong Xingye, Tsinghua University Press, 2021, ISBN: 9787302586906 <li>3. C++ Programming, Tan Haoqiang, Tsinghua University Press, 2012 , ISBN: 9787302587613 <li>4. Visual C++ : From Introduction to Mastery (5th Edition), Tomorrow Technology, Tsinghua University Press, 2017, ISBN: 9787302458180

34 Linux Operating System

Linux Operating System

Curriculum name	Linux Operating System		
Curriculum level	Undergraduate level		
Curriculum code	05A21088		
Subordinate module	Computer technology module		
Semester	The sixth semester		
Curriculum director	Zeng Jun		
Lecturer	Zeng Jun, Huang Wutao		
Language	Chinese		
Curriculum nature	Compulsory		
Teaching methods	Individual-based methods (programmed teaching, unit teaching, independent design, computer teaching)		
Workload	<p>Total class hours: 180 hours (1credit hour=1hour), 1ECTS=30hours</p> <p>1. Contact time: 64 credit hours (6 credit points*10.7 credit hours, finished in 16 weeks, 4 hours per week on average, including theoretical teaching, discussing, and examination.).</p> <p>2. Self-study time: 116 credit hours (6 credit points*19.3 credit hours, finished in 18 weeks, 6.4 hour per week on average, including online course Xuexitong, practices, take-home assignments, review and examination preparation).</p>		
ECTS credits	6 credit points		
Recommended prerequisite	C language Programming, Visual c++ Programming		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOS)
	CLO-1	Master the basics of the Linux operating system.	R1

		Be proficient in Linux system installation and operation.	
	CLO-2	Master basic system management commands and operations. Be able to manage and maintain the Linux operating system.	R1
	CLO-3	Basic knowledge of Linux network and firewall security. Be able to configure Linux network and related firewall configurations.	R3
	CLO-4	Master shell scripting ability. Complete the relevant application or service writing work independently.	R3
	CLO-5	Master the configuration of the Linux network server. Through the specific server configuration example project, improve the ability to communicate, cooperate, analyze and solve problems.	R3
Content	<p>“Linux Operating System” is a professional course for students majoring in electronic information engineering. Its recommended prerequisites include “Visual C++ Programming”, “C language Programming” and so on. Through the study of this course, students can get a comprehensive understanding of the Linux operating system, improve their experimental design ability, hands-on ability and experimental skills, and lay a foundation for the study of subsequent courses and the future work of applying, managing and developing Linux. Through the specific operation learning of this course experiment, students are required to understand the installation method and use environment of Linux operating system; Comprehensive knowledge of Linux operating system use and configuration methods.</p> <p>Chapter I Overview on Linux System</p> <p>Chapter II Common Commands of Linux</p>		

	<p>Chapter III Text Editing</p> <p>Chapter IV Linux Shell Programming</p> <p>Chapter V The Core of Linux</p> <p>Chapter VI Common Development Tools</p> <p>Chapter VII Programming for a Linux Environment</p> <p>Chapter VIII Linux System Management</p> <p>Chapter IX Network Application and Management</p> <p>Chapter X Basic Linux Experiments</p>
<p>Study and examination requirements and forms of examination</p>	<p>The final exam of this curriculum is practical and lasts 100 minutes. The final grade in this curriculum is composed of a final examination accounting for 60%, and the class work, take-home assignments, questions, discussions, etc., account for 40%.</p>
<p>Media employed</p>	<p>Computer, projector, blackboard, PPT courseware, and online websites</p>
<p>Reading list</p>	<p>10. Linux Basics and Application Course, Liang Rujun et al., China Machine Press, January 2020, 2nd edition, ISBN: 9787111537939</p> <p>11. Linux Operating System, He Shaohua et al., Posts and Telecommunications Press, August 2017, 3rd edition, ISBN: 9787115463074</p>

Module Four Electronic Information Basis Module

35 Circuit Analysis

Circuit Analysis

Curriculum name	Circuit Analysis		
Curriculum level	Undergraduate level		
Curriculum code	05A21070		
Subordinate module	Electronic Information Module		
Semester	The second semester		
Curriculum director	Wang Lianying		
Lecturer	Wang Lianying, Huang Liang, Li Li		
Language	Chinese		
Curriculum nature	Compulsory		
Teaching methods	Teacher-centered methods (teaching, questioning, and demonstrating), practical method (studying in laboratory)		
Workload	<p>Total class hours: 150 hours (1 credit hour=1 hour), 1 ECTS=30 hours</p> <p>1. Contact time: 80 credit hours (5 credit points*16 credit hours, finished in 16 weeks, 5 hours per week on average, including theoretical teaching, discussing, and examination.).</p> <p>2. Self-study time: 70 credit hours (5 credit points*14 credit hours, finished in 14 weeks, 5 hours per week on average, including online course Mooc, practices, take-home assignments, review and examination preparation).</p>		
ECTS credits	5 credit points		
Recommended prerequisite	Advanced Mathematics, University physics		
Learning outcomes and their	Course Learning Outcome (CLO)	Description	Supported Intended Learning

corresponding ILOs			Objective (ILOS)
	CLO-1	Be proficient in mesh analysis and node analysis, superposition method, single-port network decomposition method and other calculation methods; can calculate the corresponding circuit problems.	R1
	CLO-2	Have a deep understanding of the transient process of the first-order circuit and the second-order circuit switching, and experience the differences between zero input, zero state and full response solution. Learn to solve such circuit problems by employing differential equations. Have a deep understanding of the amplitude phasor of voltage and current of sinusoidal steady-state circuit, frequency response of multi-frequency sinusoidal steady-state circuit, the differences between coupling inductance and ideal transformer, and learn to solve sinusoidal steady-state circuit by frequency domain analysis.	R2
	CLO-3	Be able to apply the basic principles and knowledge of circuits, design solutions to complex engineering problems, design circuit systems, unit circuits or processes to meet specific needs, and be able to reflect innovation in the design process, taking into account social, health, safety, legal, cultural and environmental factors.	R3,R4

Content	<p>“Circuit Analysis” is a basic professional course for electronic information engineering majors, and also a core course of the major. Contents of this curriculum mainly include the constraint relationship of voltage and current in lumped parameter circuit, mesh analysis and nodal analysis, superposition method, decomposition method of single-port network; Time domain analysis of first-order and second-order dynamic circuits; Frequency domain analysis of sinusoidal steady-state circuits, three-phase circuits, frequency response of circuits, coupled inductors and ideal transformers, etc. Its basic concepts, theories and methods have strong logic and wide practicability. Through the study of this course, students can master the basic theoretical knowledge of circuits, basic analysis methods of circuits and preliminary experimental skills, laying a preliminary foundation for further study of circuit theory and preparing necessary circuit knowledge for subsequent courses.</p> <p>Chapter I Basic Concepts and Principles of Circuit</p> <p>Chapter II General Method of Resistance Circuits Analysis</p> <p>Chapter III Circuit Theorem and Circuit Equivalence</p> <p>Chapter IV Time Domain Analysis of First-order Circuits</p> <p>Chapter V Time Domain Analysis of Second-order Circuits</p> <p>Chapter VI Sinusoidal Steady-state Circuit Analysis</p> <p>Chapter VII Three-phase Circuit</p> <p>Chapter VIII Coupling Inductors and Ideal Transformers</p> <p>Chapter IX Frequency response of the circuit</p>
Study and examination requirements and forms of examination	<p>The final exam of this curriculum is closed-book and lasts 120 minutes. The final grade in this curriculum is composed of a final examination accounting for 60%, and the class work, take-home assignments, questions, discussions, etc., account for 40%.</p>
Media employed	<p>Computer, projector, blackboard, PPT courseware, and online websites</p>

Reading list	<ol style="list-style-type: none">1. Fundamentals of Circuit Analysis, Zhang Yongrui, Xidian University Press, 4th edition, November 2017.2. Fundamentals of Circuit Analysis, Li Hansun, Higher Education Press, July 2017, 5th edition3. Circuit Analysis, Liu Jian, Publishing House of Electronics Industry, February 2016, 3rd edition.
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36 Digital Signal Processing

Digital Signal Processing

Course name	Digital Signal Processing		
Course level	Undergraduate		
Course code	05A21076		
module	Basic of Electronic & Information		
term	6th		
Course Leader	Zhang dan dan		
teachers	Zhang dan dan,Fan zhao yong, Liu yan qi		
language	Chinese		
Nature of the course	Compulsory courses		
Method of teaching	Lectures, questions, discussions		
Workload	<p>Total 180 hours, 1ECTS=30 hours</p> <p>1.teaching: 48hours (6credits*8hours, Completed in 16 weeks, with an average of 3 hours per week, including theoretical teaching, discussions, and examinations) .</p> <p>2.study: 132 hours (6credits*22hours, Completed in 20 weeks, with an average of 6.6 hours per week, Includes online courses (Learning Pass), exercises, assignments, review and exam preparation)</p>		
credits	6		
Prerequisites	Introduction to Artificial Intelligence Technology, Analog Electronic Technology, High Frequency Electronic Technology, Sensing and Detection Technology		
Learning outcomes and their corresponding training objectives	Learning outcomes	details	corresponding training objectives
	Learning outcomes-1	<p>Master the development of digital signal processing;</p> <p>Master the fundamentals of discrete-time signals and systems,</p>	R1

		<p>Master the Z-transform and frequency domain analysis methods of LSI systems;</p> <p>Master the basic concepts of digital filters.</p>	
	Learning outcomes-2	<p>The method of using discrete Fourier transform to solve the linear convolution output of the system;</p> <p>Understand and master the DFT solution method for long sequence linear convolution - overlapping addition method, DFT solution method for long sequence linear convolution - overlapping preservation method, frequency domain sampling theorem, spectral analysis method for analog signals;</p> <p>Learn the implementation method of fast Fourier inverse transform.</p>	R2,R3
	Learning outcomes-3	<p>Be able to solve practical problems based on actual needs through the implementation steps, technical specifications, IIR digital filter design methods and classifications, design methods for analog Butterworth low-pass filters, frequency band conversion methods for analog filters, and pulse response invariance methods.</p>	R4

content	<p>Digital Signal Processing is a compulsory course in the professional education platform of Electronic Information Engineering. Through lectures and exercises, students will establish the basic concept of "digital signal processing", master the basic analysis methods and tools of digital signal processing, and lay a foundation for research in communication, information, or signal processing. In the process of knowledge learning, we should strengthen the ideological and political goals of the curriculum, focus on cultivating students' thinking and application, enhance their self-learning ability, and lay a foundation for subsequent professional courses, so as to better apply them in various fields of information development.</p> <p>Chapter I The Development and Application of Digital Signal Processing</p> <p>Chapter II Discrete time signals and systems</p> <p>Chapter III Z-transform and frequency-domain analysis method for LSI systems</p> <p>Chapter IV Discrete Fourier Transform</p> <p>Chapter V fast Fourier transform</p> <p>Chapter VI Overview of Digital Filters</p> <p>Chapter VII IIR Design of Digital Filters</p>
Learning and exam requirements, as well as exam format	The final exam of this course is 120 minutes . The final exam score accounts for 70% of the total score, and assignments, daily performances, questions, discussions, etc. account for 30%.
media	Computer, projector, blackboard, PPT courseware, online website
Reading list	<p>Gao xi quan, Digital Signal Dealing, Xidian University Press , 2019.7(4th edition) .</p> <p>Wu da zheng, Signal and Linear System Analysis, Higher Education Press, 2018.3.</p> <p>Zheng jun li, Signal and System, Higher Education Press, 2011.3.</p> <p>Chen huai chen, Digital Signal Processing Tutorial, Electronic Industry Press, 2013.8.</p>

37 Analog Electronic Technology

Analog Electronic Technology

Course name	Analog Electronic Technology		
Course level	undergraduate		
Course code	05A21071		
Module	Electronic Information Basic Module		
Term	third term		
Course Leader	Wang lian ying		
Teachers	Wang lian ying, Li li, Liu yan qi		
Language	Chinese		
Nature of the course	Compulsory courses		
Method of teaching	Lectures, questions, discussions,demonstration		
Workload	<p>Total 180hours (1ECTS=30 hours)</p> <p>1.teaching: 64hours (6 credits*10.7hours, Completed in 16 weeks, with an average of 4 class hours per week, including theoretical teaching, discussions, exams, and experiments) .</p> <p>2.study: 116hours (6credits*19.3 hours, Completed in 20 weeks, with an average of 5.8 class hours per week, including online courses , exercises, assignments, review and exam preparation) .</p>		
credits	6		
Prerequisites	Introduction to Artificial Intelligence Technology, circuit analysis		
Learning outcomes and corresponding training objectives	Course learning outcomes	details	corresponding training objectives
	outcomes-1	Master the basic working principles, main characteristics, and main parameters of commonly used semiconductor devices such as	R1

		<p>diodes, transistors, field-effect transistors, and integrated operational amplifiers;</p> <p>Able to understand basic components, main parameters of components, and basic working principles</p>	
	<p>outcomes-2</p>	<p>Understand the concept and performance indicators of basic amplification circuits, master the working principle and basic analysis methods of basic common beam amplification circuits, including static and dynamic analysis, understand how to set appropriate static operating points, calculate amplification factor and input/output resistance;</p> <p>Be able to understand the performance indicators of amplification circuits, understand the amplification factors of different configurations of basic amplification circuits and differential amplification circuits, the characteristics of input and output resistors, and analyze which amplification circuit forms should be used for input stage, intermediate stage, and output stage in multi-stage amplification circuits. Be able to apply the knowledge learned to analyze and explain the signal amplification process of the multi-level amplification circuit</p>	<p>R2</p>

		<p>inside the integrated chip; Understand the composition and characteristics of power amplification circuits, master the composition and working principle of complementary power amplification OCL circuits, and understand the safe operating conditions of power amplification circuits.</p>	
	<p>outcomes-3</p>	<p>Be able to choose different types of feedback based on actual needs. Choose different negative feedback configurations based on the type of signal source and output signal requirements.</p> <p>Understand the composition and structural characteristics of integrated operational amplifier circuits, understand the performance indicators and parameters of integrated operational amplifiers, and master how to choose a suitable integrated operational amplifier;</p> <p>Master the composition and working principle of sine wave oscillation circuits, learn to use several commonly used voltage comparators, such as single limit comparators, hysteresis comparators, and window comparators, master the working principle of non sine wave generation circuits, such as rectangular wave generation circuits, triangular wave generation circuits,</p>	<p>R3,R4</p>

		<p>etc., and understand the use of integrated operational amplifiers to achieve signal conversion circuits;</p> <p>Learn how to use commonly used electronic instruments such as multimeter, function signal generator, oscilloscope, etc. to detect and analyze analog electronic circuits, and how to apply Multisim software to simulate and analyze analog electronic circuits.</p>	
content	<p>The course, Analog Electronic Technology, is a rapidly developing, highly theoretical, practical, foundational, and application-oriented foundational course for electronic majors. The course aims to provide students with basic knowledge, theories, and skills in analog electronic technology through the study of commonly used electronic devices, analog electronic circuits, and their system analysis and design, laying a solid foundation for in-depth learning of electronic technology and its applications in the field.</p> <p>Chapter I Semiconductor diodes and their basic applications</p> <p>Chapter II Semiconductor Triode and Its Basic Applications</p> <p>Chapter III Fundamentals of Amplification Circuits</p> <p>Chapter IV Negative Feedback Amplification Circuit</p> <p>Chapter V Frequency Response of Amplification Circuits</p> <p>Chapter VI Application of Integrated Amplifiers</p> <p>Chapter VII Signal Generation Circuit</p> <p>Chapter VIII DC Stabilized Power Supply</p>		
Learning and exam requirements, as well as exam format	<p>The final exam of this course is 120 minutes. The final exam score accounts for 70% of the total score, and assignments, daily performances, questions, discussions, etc. account for 30%.</p>		
media	<p>Computer, projector, blackboard, PPT courseware, online website</p>		

Reading list	<p>Hua cheng ying, Fundamentals of Analog Electronic Technology (Fifth Edition), Higher Education Press, 2015.7</p> <p>Kang hua guang, Basic Simulation of Electronic Technology (Sixth Edition), Higher Education Press, 2013.12</p>
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38 Digital Electronic Technology

Digital Electronic Technology

Course name	Digital Electronic Technology		
Course level	undergraduate		
Course code	05A21072		
Module	Electronic Information Basic Module		
Term	4th term		
Course Leader	Yuan ke		
Teachers	Yuan ke, Wang lian ying		
Language	Chinese		
Nature of the course	Compulsory courses		
Method of teaching	Lectures,practice, discussions		
Workload	<p>Total 180 hours (1ECTS=hours)</p> <p>1.teaching: 64hours (6credits*11hours, Completed in 11 weeks, with an average of 6 class hours per week, including theoretical teaching, discussions, exams, and experiments) .</p> <p>2.study: 16hours (6 credits*19hours, Completed in 19 weeks, with an average of 6 class hours per week, including online courses , exercises, assignments, review and exam preparation) .</p>		
Credit	6		
Prerequisites	Introduction to Artificial Intelligence Technologies,Circuit analysis ,Analog electronics		
Learning outcomes and corresponding training objectives	outcomes	details	corresponding learning objectives
	outcome-1	master numerical conversion and coding methods in numerical systems;Ability to perform operations on logical algebra and	R1

	simplify logical expressions using formulas or Carnot diagrams.	
outcome-2	Master the application of basic gate circuits and how to design combinatorial logic circuits. Be able to use the learned adder, encoder, decoder, data selector and other logic devices to expand the application of circuits.	R2,R3
outcome-3	Master the characteristics and classification of sequential logic circuits. Ability to analyze the logic functions of small-scale and commonly used medium-scale integrated logic devices (counters, shift registers, etc.) and leverage the device for expansion and application.	R3,R4
outcome-4	Master the working principles and applications of Schmitt, monostable flip-flops, and multivibrators composed of 555 timers. Understand how digital-to-analog and analog-to-digital conversion circuits work. Master the design methods of comprehensive circuits.	R3,R4
content	Digital Electronic Technology is an important course of electronic information engineering, through the study of this course, students can master the basic theoretical knowledge of logical algebra, digital circuit analysis and design methods. In teaching activities, emphasis should be placed on enlightening students' logical thinking methods, establishing students' logical thinking ability, leaving enough room for students' imagination, and guiding students to cultivate the ability to innovate and develop digital circuit devices; In the process of analysis and design, students will	

	<p>improve their theoretical and practical skills and lay a solid foundation for subsequent courses. At the same time, it cultivates students' professional ethics and sentiments of dedication, conscientiousness and responsibility, and excellence.</p> <p>Chapter I Introduction</p> <p>Chapter II Fundamentals of Logical Algebra</p> <p>Chapter III Integrated Logic Gate Circuits</p> <p>Chapter IV Logic Circuits Combination</p> <p>Chapter V Triggers</p> <p>Chapter VI Sequential Logic Circuits</p> <p>Chapter VII Pulse Generation and Shaping Circuits</p> <p>Chapter VIII Digital-to-Analog and Analog-to-Digital Converters</p> <p>Chapter IX Semiconductor Memory</p>
Learning and exam requirements, as well as exam format	The final exam of this course is 120 minutes. The final exam score accounts for 70% of the total score, and assignments, daily performances, questions, discussions, etc. account for 30%.
media	Computer, projector, blackboard, PPT courseware, online website
Reading list	<p>Yang zhi zhong and Wei hua lin, Fundamentals of Digital Electronics, Higher Education Press, 2023.5(4th Edition) .</p> <p>Yan shi, Fundamentals of Digital Electronics, Higher Education Press, 2019.9(5th Edition) .</p> <p>Yu meng chang, A Concise Tutorial on the Fundamentals of Figital Electronics, Higher Education Press, 2018.12(4th Edition) .</p>

39 Signals and Systems

Signals and Systems

Course name	Signals and Systems		
Course level	Undergraduate		
Course code	05A21073		
Module	Electronic Information Foundation Module		
Term	4 th term		
Course Leader	Zhang dan dan		
Teachers	Zhang dan dan ,Wei yan ping and Hu ze wei		
Language	Chinese		
Nature of the course	Compulsory courses		
Method of teaching	Lectures,questions, discussions		
Workload	<p>Total 120 hours (1ECTS=30hours)</p> <p>1Teaching: 64 hours (4credits*16hours, Completed in 16 weeks, with an average of 4 hours per week, including theoretical teaching, discussions and exams) .</p> <p>2.Study: 56hours (4credits*14hours, Completed in 14 weeks, with an average of 4 hours per week, including online courses , exercises, assignments, review and exam preparation) .</p>		
Credits	4credits		
Prerequisites	Analog electronics and Digital electronics		
Learning outcomes and corresponding training objectives	Outcomes	Details	Corresponding learning objectives
	Outcome-1	<p>Master the basic operation and decomposition of signals.Understand step function and impulse function properties.</p> <p>Master block diagram representation</p>	R1

		of linear systems.	
	Outcome-2	<p>Master the establishment and solution of differential equations.</p> <p>Grasp the establishment and significance of impulse response. Master the zero-state response of the solution system.</p> <p>Mastering the use of graphical methods and definitions to solve convolutional integrals, able to flexibly calculate convolutional integrals by using the properties of convolutional integrals.</p>	R2
	Outcome-3	<p>Master the orthogonal decomposition of commonly used information, and you can write the Fourier series of commonly used signals</p> <p>Can draw the spectrum of periodic signals, perform Fourier transforms on non-periodic signals and periodic signals, and flexibly calculate the Fourier transform of signals by using the properties of Fourier transforms.</p> <p>Master the analysis of the energy spectrum and power spectrum of the signal, analyze the frequency domain characteristics and response problems of the system, and master the application of the sampling theorem.</p>	R3
	Outcome-4	<p>Master the Laplace transform of the signal, and be able to flexibly calculate the Laplace transform of</p>	R4

		<p>the signal by using the properties of the Laplace transform.</p> <p>Master the inverse Laplace transform and complex frequency domain analysis.</p> <p>Master the functions and characteristics of the system, and grasp the causality and stability of the system.</p> <p>Master how to draw signal flow diagrams.</p> <p>Master the establishment of equations of state for continuous systems; Master the solution of equations of state for continuous systems.</p>	
<p>Contents</p>	<p>Signals and Systems is a compulsory course for electronic information engineering, which mainly covers the time domain analysis of continuous systems, time domain analysis of discrete systems, S-domain analysis and other related contents. Through the study of this course, students will master the basic theories and analysis methods of signal analysis, linear system analysis and digital signal processing, and have a preliminary understanding of some applications of these theories and methods in engineering, so as to lay a solid foundation for adapting to the rapid development of information science and technology and in-depth study in related professional fields. At the same time, the knowledge learning process is carried out, focusing on cultivating students' thinking and application, improving students' independent learning ability, and laying the foundation for the study of subsequent professional courses, so that they can be better used in various fields of information development.</p> <p>Chapter I Signals and Systems</p> <p>Chapter II Time Domain Analysis of Continuous Systems</p> <p>Chapter III Time Domain Analysis of Discrete Systems</p> <p>Chapter IV Fourier Transform and Frequency Domain Analysis of Systems</p>		

	<p>Chapter V S-domain analysis of continuous systems</p> <p>Chapter VI Z-domain analysis of discrete systems</p> <p>Chapter VII System Functions</p> <p>Chapter VIII Analysis of State Variables in Systems</p>
Learning and exam requirements, as well as exam format	The final exam of this course is 120 minutes . The final exam score accounts for 70% of the total score, and assignments, daily performances, questions, discussions, etc. account for 30%.
Media	Computer, projector, blackboard, PPT courseware, online website
Reading list	<p>Wu da zheng, Signal and Linear System Analysis, Higher Education Press, 2019.3</p> <p>Zheng Jun li, Signals and Systems, Higher Education Press, 2011.3</p> <p>Jiang jian guo, Fundamentals of Signal and System Analysis, Tsinghua University Press, 2018.7</p>

40 Principle of Pattern Recognition

Principle of Pattern Recognition

Course name	Principle of Pattern Recognition		
Course level	Undergraduate		
Course code	05A21077		
Module	Electronic Information Foundation Module		
Term	7th term		
Course Leader	Qiu xiu lan		
Teachers	Qiu xiu lan		
Language	Chinese		
Nature of the course	Compulsory courses		
Method of teaching	Lectures, questions, demonstrations		
Workload	<p>Total 120hours (1ECTS=30hours)</p> <p>1. Teaching: 48hours (4credits*12hours, Completed in 16 weeks, with an average of 3 hours per week, including theoretical teaching, discussions and exams) .</p> <p>2. Study: 72 hours (4credit*18hours, Completed in 12 weeks, with an average of 6 hours per week, including exercises, assignments, review and exam preparation) .</p>		
Credits	4		
Prerequisites	Introduction to Artificial Intelligence Technology, Analog electronics, Digital Electronics, Signal and System, and Automatic Control Principle		
Learning outcomes and corresponding training objectives	Outcomes	Details	Corresponding learning objectives
	Outcome-1	Understand the concept of pattern recognition, the historical development and current status of pattern recognition technology; Master the pattern	R1

		<p>recognition system, the main methods of pattern recognition, and understand the various application scenarios of pattern recognition technology;</p> <p>Master the basic concepts of parameter estimation, normally distributed supervised parameter estimation and unsupervised parameter estimation;</p>	
	Outcome-2	<p>Master the principles of Bayesian formulas and several typical Bayesian classifiers; Understand the basic concepts of decision functions and their application background;</p> <p>Understand the basic concepts and classification methods of generalized decision functions;</p> <p>Master the decision rules of the nearest neighbor method, the nearest neighbor classifier, the k-nearest neighbor method and its optimization;</p> <p>Understand the definition of data clustering, master the concepts of classical and fuzzy clustering algorithms, and the practical application of data classes.</p>	R2,R3
	Outcome-3	<p>According to the actual needs, through the early algorithm learning, the simple vehicle license plate can be recognized, and the basic method can be optimized to improve the recognition rate and solve practical</p>	R4

		problems.	
Contents	<p>Principle of pattern recognition is a professional core theoretical course of electronic information engineering. Through the study of this course, students will master the basic concepts and methods of pattern recognition, effectively apply the knowledge and methods they have learned to solve practical problems, and lay a foundation for the study of new theories and methods of pattern recognition. In the teaching activities, it emphasizes the cultivation of students' self-learning ability, improves students' logical thinking ability, leaves enough space for students to think, cultivates students' innovative thinking, and guides students to optimize or innovate existing methods and theories. Through the application of some common classic examples, students can comprehensively apply the knowledge they have learned and achieve the goal of cultivating comprehensive application-oriented talents.</p> <p>Chapter I Introduction</p> <p>Chapter II Distance Classifiers</p> <p>Chapter III Cluster Analysis</p> <p>Chapter IV Linear Discriminant Function Classifiers</p> <p>Chapter V Feature Selection and Feature Extraction</p> <p>Chapter VI Nonlinear Discriminant Function Classifiers</p> <p>Chapter VII Statistical Classifiers and Their Learning</p> <p>Chapter VIII Pattern Recognition Application System Examples</p>		
Learning and exam requirements, as well as exam format	<p>The final exam of this course is 120 minutes . The final exam score accounts for 70% of the total score, and assignments, daily performances, questions, discussions, etc. account for 30%.</p>		
Media	<p>Computer, projector, blackboard, PPT courseware, online website</p>		

<p>Reading List</p>	<p>Pattern Recognition (2nd Edition),Liu jia feng, Harbin Engineering University Press,2017.7, 2nd Edition, ISBN:9787111505778</p> <p>Zhou li fang,Li wei sheng and Huang ying,Principle and engineering application of pattern recognition,China Machine Press,2013.</p> <p>Zhang xue gong.Pattern Recognition[3].3 version.Beijing: Tsinghua University Press,2010.</p> <p>Sun ji xiang, Modern Pattern Recognition,National University of Defense Technology Press, 2003.</p> <p>Translated by Li jing jiao and so on, Pattern Recognition (3rd Edition),Publishing House of Electronics Industry,2006</p>
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41 Automatic Control Principle

Automatic control Principle

Curriculum name	Automatic Control Principle		
Curriculum level	Undergraduate level		
Curriculum code	05A21075		
The module	Electronic information foundation module		
Semester	The fifth semester		
Person responsible for the curriculum	Li Chunling		
Lecturer	Li Chunling, Zhang Dandan		
Language	the Chinese language		
Curriculum nature	Compulsory course		
Teaching method, teaching time	Teacher-centered approach (lecturing, questioning, argumentation)		
Workload	<p>Total class hours: 120 hours (1 credit hour =1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 48 credit hours (4 credits * 12 credit hours, completed in 16 weeks, an average of 3 credit hours per week, including theoretical teaching, experiment, discussion and examination).</p> <p>2. Self-study: 72 credit hours (4 credits * 18 credit hours, completed in 16 weeks, with an average of 4.5 credit hours per week, including online courses, exercises, homework, reports, and test preparation).</p>		
Credit	4 Credits		
Recommended prerequisites	Advanced mathematics, circuit analysis, analog electronic technology, signal and system		
Learning outcomes and their corresponding ILOs	Curriculum learning results	Description	Supported learning objectives
	Learning results-1	Master the basic concepts and	R1

		principles of automatic control system, Fourier transform and Laplace transform; master the box diagram of automatic control system, box diagram simplification and signal flow diagram; master the time domain analysis of first and second order systems; understand the stability and algebraic criterion, be able to correctly draw the root track, Nyquist, Burde diagram, calculate the steady state error, and establish the mathematical model of the control system.	
	Learning results-2	Master the common performance analysis methods such as frequency response method, root track method and Nyquist method, and analyze the performance (stability, speed and accuracy of the control system).	R2
	Learning results-3	It can select appropriate control algorithms and parameters according to the performance index, design the control system, and make correction and compensation.	R3,R4
Content	<p>The principle of automatic control is a basic course of electronic information engineering, which requires students to systematically master the basic principles and methods of automatic control system, and conduct qualitative analysis, quantitative calculation and comprehensive design of the control system, so as to lay a solid foundation for the subsequent professional courses and engineering practice. The specific contents are as follows:</p> <p>Part I Basic knowledge of automatic control system</p> <p>Chapter I Automatic control concept, classification, principle and performance requirements</p> <p>Chapter II Fourier transform and Laplace transform, modeling method, box diagram and simplification, signal flow diagram</p> <p>Part II the automatic control system analysis method</p> <p>Chapter I Time-domain analysis method: performance index, stability analysis,</p>		

	<p>and steady-state error analysis</p> <p>Chapter II Root trajectory analysis: the drawing method of root trajectory, generalized root trajectory, dominant pole and dipole</p> <p>Chapter III Frequency domain analysis: typical link frequency characteristics, nai diagram and Bird diagram; nai stability criterion, phase margin and amplitude margin; resonance frequency, resonance peak and bandwidth</p> <p>Part III Automatic control system correction</p> <p>Chapter I Advance correction device, phase late correction device, phase late-advance correction device</p> <p>Chapter II Design and correction method root track method, design and correction method of frequency method</p>
Study and examination requirements and forms of examination	<p>The final exam of this course is closed book, and the exam time is 120 minutes. The final score accounts for 70% of the total score, and the usual score (homework, experiment report, questions and discussion) accounts for 30%. Students must get a final score of more than 60 points to pass.</p>
Media employed	<p>Projector, whiteboard, PPT courseware, computer, website</p>
Reading list	<ol style="list-style-type: none"> 1. Hu Shousong. The basic tutorial of automatic Control principle, the third edition. science press,2014. 2 ISBN:9787030370587 2. Wang Yanwu, Zhang Zheng, Fan Huijin, Liu Lei, Automatic Control principle —— Classic Control, Higher Education Press, 2023.1 ISBN: 9787040594003 3. Automatic control principle _ Huazhong University of Science and Technology _ China University MOOC (MOOCs) (icourse163.org)

Module Five Intelligent Terminal Hardware Development Technology Module

42 Computer Composition Principle

Computer Composition Principle

Curriculum name	Computer Composition Principle
Curriculum level	Undergraduate level
Curriculum code	05A21079
The module	Intelligent terminal hardware development technology module
Semester	The fourth semester
Person responsible for the curriculum	Wang Fei
Lecturer	Wang Fei, Zheng Liwen
Language	the Chinese language
Curriculum nature	Compulsory course
Teaching method, teaching time	Teacher-centered approach (lecturing, questioning, argumentation)
Workload	<p>Total class hours 90 hours (1 hour =1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 48 credit hours (3 credits * 16 credit hours, completed in 16 weeks, an average of 3 credit hours per week, including theoretical teaching, discussion and examination).</p> <p>2. Self-study: 42 credit hours (3 credits * 14 credit hours, completed in 14 weeks, an average of 3 credit hours per week, including online courses (learning pass), practice, homework, review and preparation).</p>
Credit	Three credits
Recommended	—

prerequisites			
	Curriculum learning results	Description	Supported learning objectives
Learning outcomes and their corresponding ILOs	Learning results-1	<p>Master the basic composition and principle of the computer hardware system;</p> <p>Understand the relationship between computer instruction set architecture (ISA) and microarchitecture (Microarchitecture), and their impact on computer performance.</p>	R1
	Learning results-2	<p>Identify and analyze performance problems arising in computer systems, such as processor bottlenecks, memory delays, etc.</p> <p>Be able to use the knowledge to analyze and explain the interactions and influences between components in a computer system.</p>	R2
	Learning results-3	<p>Ability to design the overall architecture and component parameters of the computer system according to the actual requirements.</p> <p>Master the development process of computer system, including requirements analysis, system design, coding implementation and test verification.</p> <p>Learn to design and verify computer systems using simulation tools or the hardware description language (HDL).</p>	R3,R4

Content	<p>Principles of Computer Composition is an important course of electronic information engineering, focusing on the internal structure and operation mechanism of computer system. The course deeply analyzes the core components such as processor and memory, emphasizes the combination of theory and practice, cultivates students' ability to understand, analyze and design computer systems, and provides a solid theoretical foundation for the development of hardware and software in the field of electronic information engineering.</p> <p>Chapter I An Introduction to Computer Systems</p> <p>Chapter II The Development and application of computers</p> <p>Chapter III System bus</p> <p>Chapter IV The memory</p> <p>Chapter V The input and output system</p> <p>Chapter VI Operation methods of computers</p> <p>Chapter VII The instruction system</p> <p>Chapter VIII Structure and function of the CPU</p> <p>Chapter IX Function of the control unit</p> <p>Chapter X The Design of the control unit</p> <p>Chapter XI Course Design of computer composition principle</p>
Study and examination requirements and forms of examination	<p>The final exam of the course is closed book with 120 minutes. The final exam results account for 70% of the total score, and class homework, homework, questions and discussion account for 30%.</p>
Media employed	<p>Computers, projector, blackboard, PPT courseware, online website</p>
Reading list	<p>12. Bai Zhongying, Principles of Computer Composition, Science Press, 2016.6 (5th edition).</p> <p>13. Gu He, Zou Fenghua, Li Nianfeng, computer composition principle, Tsinghua University Press, 2013.1.</p> <p>14. Jiang Benshan, Learning Guidance and Exercise Analysis of Computer Composition Principles, Tsinghua University Press, 2020.11.</p>

43 Sensing and Detection Technology

Sensing and Detection Technology

Curriculum name	Sensing and Detection Technology		
Curriculum level	Undergraduate level		
Curriculum code	05A21079		
The module	Intelligent terminal hardware development technology module		
Semester	The fourth semester		
Person responsible for the curriculum	CAI Jiu evaluation		
Lecturer	CAI Jiujian, Wang Fei, Zheng Liwen		
Language	the Chinese language		
Curriculum nature	Compulsory course		
Teaching method, teaching time	Teacher center methods (teaching, questioning, demonstration), practice methods (laboratory learning, practice)		
Workload	<p>Total class hours: 150 hours (1 credit hour =1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 48 credit hours (5 credits * 9.6 credit hours, completed in 16 weeks, an average of 3 credit hours per week, including theoretical teaching, discussion, experimental training and examination).</p> <p>2. Self-study: 102 credit hours (5 credits * 20.4 credit hours, completed in 17 weeks, an average of 6 credit hours per week, including online courses (learning pass), practice, homework, practical training report, review and preparation).</p>		
Credit	5 Credits		
Recommended prerequisites	Introduction to Artificial Intelligence Technology, Analog Electronic Technology, Circuit Analysis		
Learning outcomes and their corresponding ILOs	Curriculum learning results	Description	Supported learning objectives
	Learning results-1	Understand the definition and basic characteristics of the sensors;	R1

		<p>Master the basic composition and working principle of various common sensors;</p> <p>Master the basic parameter detection methods.</p>	
	Learning results-2	<p>Master the measurement circuit and typical applications of various basic sensors;</p> <p>Master the basic design method of the automatic detection system;</p> <p>In the process of experimental training, learn to use some basic sensors to measure simple non-electricity.</p>	R2
	Learning results-3	<p>Be able to use the knowledge, analyze and explain the source of error in the process of experimental measurement and the generation of experimental results, and reasonably put forward the methods and measures to improve the measurement accuracy;</p> <p>According to the actual needs, we can use the sensor system experiment box or simulation tools to design a set of automatic detection system.</p>	R3,R4

Content	<p>The Sensing and Detection Technology is a professional core course of electronic information engineering major. The course content consists of three modules: sensor principle, detection technology and detection system. The principle of sensor mainly includes the basic characteristics of sensors, the working principles and application of various traditional and new sensors (resistance, inductor, capacitive, piezoelectric, magnetic, thermoelectric, photoelectric, radiation and wave sensors, chemical sensors, biological sensors and new sensors); the detection technology mainly includes parameter detection, weak signal detection, soft measurement, multi-sensor data fusion, error theory and data processing foundation; the detection system mainly includes virtual instruments and automatic detection system. Focus on analyzing the basic working principle of various sensors and its measurement circuit, give the typical application to further strengthen the principle and guide the application practice, carefully designed learning development and inquiry discussion, complex engineering problems practice project to cultivate students' innovative thinking and the ability to use the knowledge to solve practical problems; at the same time, the content reflects the latest development in the field. Through the teaching of this course, it will lay a good foundation for the future study of related electronic professional courses, enable students to acquire the basic theory of electronic technology and the composition of the subject system, and play a guiding role in the further development of professional learning.</p> <p>Chapter I Overview</p> <p>Chapter II Basic characteristics of the sensor</p> <p>Chapter III Resistance type, sensor</p> <p>Chapter IV Inductor sensor</p> <p>Chapter V Capacitive sensor</p> <p>Chapter VI Piezoelectric sensor</p> <p>Chapter VII Magnetic sensitivity sensor</p> <p>Chapter VIII Thermoelectric type, sensor</p> <p>Chapter IX Photoelectric sensor</p> <p>Chapter X Radiation and wave sensors</p> <p>Chapter XI Chemical sensors</p> <p>Chapter XII Biosensors</p> <p>Chapter XIII New Sensors</p>
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	<p>Chapter XIV Parameter Testing</p> <p>Chapter XV Weak signal detection</p> <p>Chapter XVI Soft measurement</p> <p>Chapter XVII Multi-sensor data fusion</p> <p>Chapter XVIII Error theory and the basis of data processing</p> <p>Chapter XIX Virtual Instruments</p> <p>Chapter XX Automatic detection system</p>
Study and examination requirements and forms of examination	The final exam of this course is closed book, with 120 minutes. The final exam results account for 60% of the total score, and the experimental training performance, training report, classroom homework, questions and discussion account for 40%.
Media employed	Computer, projector, blackboard, PPT courseware, YC-XS-01 type sensor system test box 20190820 V3.1, online website
Reading list	<p>15. Sensors and Detection Technology (4th edition), by Hu Xiangdong et al., Mechanical Press, March 2021, ISBN: 978-7-111-67268-5.</p> <p>16. Sensors and Detection Technology (5th edition), Xu Kejun, Electronics Industry Press, June 2021, ISBN: 9787121406669.</p> <p>17. Sensor and Detection Technology (2nd edition), Niu Baiqi, Dong Ming, Mechanical Press, January 2021, ISBN: 978-7-111-66325-6.</p> <p>18. Sensor and Detection Technology (2nd edition), Lin Jinshi, Zhang Wenwen, Mechanical Press, July 2021, ISBN: ISBN: 978-7-111-67856-4.</p>

44 Principle and Application of SCM

Principle and Application of SCM

Curriculum name	Principle and Application of SCM		
Curriculum level	Undergraduate level		
Curriculum code	05A21080		
The module	Intelligent terminal hardware development technology module		
Semester	The fifth semester		
Person responsible for the curriculum	Li Chunling		
Lecturer	Li Chunling, Xiao Hailiu		
Language	the Chinese language		
Curriculum nature	Compulsory course		
Teaching method, teaching time	Teacher-centered methods (teaching, questioning, demonstration) and practice methods (laboratory learning)		
Workload	<p>Total class hours: 180 hours (1 credit hour =1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 80 credit hours (6 credits * 13.3 credit hours, completed in 16 weeks, an average of 5 credit hours per week, including theoretical teaching, simulation demonstration, practical operation, discussion and examination).</p> <p>2. Self-study: 100 credit hours (6 credits * 16.7 credit hours, completed in 16 weeks, average 6.25 credit hours per week, including online courses (university MOOC), extension experiment, practice, homework, review and preparation).</p>		
Credit	6 Credits		
Recommended prerequisites	Introduction to artificial intelligence, analog electronic technology, digital electronic technology, computer composition principle		
Learning outcomes and their corresponding ILOs	Curriculum learning results	Description	Supported learning objectives
	Learning results-1	Familiar with the SCM system development environment;	R5

		Can use PROTUES for hardware circuit simulation; KEIL C for C programming and debugging.	
	Learning results-2	<p>Master the basic composition and principles of the microcontroller hardware system;</p> <p>Understand the composition and working principle of each functional module of the MCU, can control the special function register in the MCU module, and complete the initialization of each functional module.</p>	R1
	Learning results-3	<p>Master the common expansion technology of MCU, and select and design according to the requirements:</p> <p>Can expand human interface function: keyboard and display; can expand process channel: AD channel and DA channel.</p>	R2
	Learning results-4	<p>It can design the microcontroller control circuit according to the actual demand.</p> <p>Master the development process of CM system, including demand analysis, hardware system design, software coding, simulation debugging and circuit production, etc.</p> <p>Learn to use simulation tools for the design, simulation, production and debugging of microCM system.</p>	R3,R4,R5

Content	<p>“Principles and Application of SCM” is the core course of electronic information engineering major, focusing on the internal structure and working principle of SCM. Course deeply analyzes the 51 SU processor, memory, parallel interface, timing counter, interrupt system and serial interface core components, analyzes the MCU commonly used extension technology, emphasize the combination of theory and practice, train students with microcontroller basic control circuit of the hardware and software design, simulation, production and debugging ability. At the same time, it trains students on the consciousness of independent learning and teamwork, and the scientific spirit of continuous innovation and excellence, which will lay a foundation for the research and development of single-chip microcomputer application system in the future.</p> <p>Project 1 Understanding 51 MCU</p> <p>Project 2 Minimum system design and software development environment for 51 SU</p> <p>Project 3 Design of pattern flowing water lamp</p> <p>Project 4 Electronic stopwatch design</p> <p>Project 5 Design of the traffic signal lights</p> <p>Project 6 Design of a simple electronic organ</p> <p>Project 7 Design of the single-chip microcomputer and computer communication system</p> <p>Project 8 Design of the digital temperature acquisition system</p> <p>Project 9 Design of the signal generator</p>
Study and examination requirements and forms of examination	<p>The final exam of this course is a practical operation, with 120 minutes. The final exam results account for 70% of the total score, and attendance, practice, homework, discussion and network platform tasks account for 30%.</p>
Media employed	<p>Computers, projector, blackboard, PPT courseware, online website</p>

Reading list	<p>19. Zhang Yigang, 51 typical CM, People's Posts and Telecommunications Press, 2018.</p> <p>20. Tang Jiali, CM Application technology tutorial (C51), People's Posts and Telecommunications Press, 2014.</p> <p>21. Wang Yun, 51 CM C Language Program Design Course, People's Posts and Telecommunications Press, 2018.</p> <p>22. CAI Xingshan, 51, People's Posts and Telecommunications Press, 2018.</p> <p>23. Lin Li, CM principle and Application-Based on Proteus and Keil C, Electronics Industry Press, 2018. The fourth edition.</p>
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45 Principles and Application of Embedded System

Principles and Application of Embedded System

Curriculum name	Principles and Application of Embedded System		
Curriculum level	Undergraduate level		
Curriculum code	05A21089		
The module	Intelligent terminal hardware development technology module		
Semester	The sixth semester		
Person responsible for the curriculum	Zhang Mingde		
Lecturer	Zhang Mingde, Wei Yanping, Zou Lianying		
Language	the Chinese language		
Curriculum nature	Compulsory course		
Teaching method, teaching time	Teacher center methods (teaching, questioning, demonstration), practice methods (laboratory learning, practice)		
Workload	<p>Total class hours: 180 hours (1 credit hour =1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 64 credit hours (6 credits * 10.7 credit hours, completed in 16 weeks, an average of 4 credit hours per week, including theoretical teaching, experiment, discussion and examination).</p> <p>2. Self-study: 116 credit hours (6 credits * 19.3 credit hours, completed in 18 weeks, an average of 6.4 credit hours per week, including report preparation, practice, homework, review and preparation).</p>		
Credit	6 Credits		
Recommended prerequisites	Principles and application of digital circuit, analog circuit, C language and MCU		
Learning outcomes and their corresponding ILOs	Curriculum learning results	Description	Supported learning objectives
	Learning results-1	Master the basic principles and key technologies of the embedded	R1

		<p>system.</p> <p>Understand the basic concept and development trend of embedded system, understand the composition and structure characteristics of embedded system, understand the software and hardware composition of embedded system.</p> <p>Master the working principle, hardware architecture, software system and key technologies of the embedded system, such as real-time operating system and embedded microprocessor.</p>	
	Learning results-2	<p>Can choose the appropriate embedded microprocessor according to the requirements, understand the concept and application of real-time and non-real-time embedded operating system.</p> <p>Be able to use the knowledge to design and implement a simple embedded system, including hardware design, software development, system testing and other links.</p> <p>It can use the basic principles of the ARM processor to complete the operation of each register and memory in the ARM system.</p>	R2
	Learning results-3	<p>Improve the ability to solve problems related to embedded systems.</p> <p>Can understand the design process and design method of embedded system, and complete simple</p>	R3,R4

		<p>embedded application development by using programming language such as C language.</p> <p>It can master the common tools and methods of embedded system design, such as embedded development board, simulator, etc., and can use the knowledge to analyze and solve the problems related to embedded system.</p> <p>Team teamwork and project management capabilities, effective embedded system development in the team.</p>	
Content	<p>The principle and Application of Embedded System is a comprehensive course integrating theory and practice. This course mainly introduces the basic principles, hardware architecture, software programming and practical application of embedded system, aiming to make students understand the basic concepts, composition and working principles of embedded system, and master the design and development skills of embedded system. Through learning, students can understand the key technologies of the embedded system, such as microprocessor, memory, input / output interface, etc., and can use the knowledge learned to design and implement the embedded system. In addition, the course also focuses on cultivating students' practical ability and teamwork spirit, so that students can apply what they have learned in practical projects and solve practical problems.</p> <p>Teaching unit 1: ARM embedded system understanding</p> <p>Teaching unit 2: STM 32 embedded processor</p> <p>Teaching unit 3 development environment construction</p> <p>Teaching unit 4: GPIO port operation</p> <p>Teaching unit 5 External interrupt operation</p> <p>Teaching unit six serial port communication port operation</p> <p>Teaching unit 7 timing / counter operation</p> <p>Teaching unit 8 A / D conversion operation</p> <p>Teaching unit 9 comprehensive project practical training</p>		

Study and examination requirements and forms of examination	The final exam of this course is a practical operation, with 120 minutes, the final exam score accounts for 50% of the total score, and accounts for 50% of the total score (16% attendance, 12% homework, 12% training report 12%)
Media employed	Computer, projector, loudspeaker, whiteboard
Reading list	<ol style="list-style-type: none"> 1. Chen Zhiwang. The STM 32 Embedded Microcontroller is quickly used. Electronic Industry Press, 2019. 2. Zhang Xinmin, Duan Honglin. The ARM Cortex-M3 Embedded Development and Application. Tsinghua University Press, 2016. 3. Peng Gang. STM32 Series Based on ARM Cortex-M 3-Embedded Microcontroller Application Practice (second Edition). Electronic Industry Press, 2017. 4. You Jun. The ARM Embedded System Tutorial. Machinery Industry Press, 2017.

46 The EDA Technology and its Application

The EDA Technology and its Application

Curriculum name	The EDA Technology and its Application		
Curriculum level	Undergraduate level		
Curriculum code	05A21083		
The module	Intelligent terminal hardware development technology module		
Semester	The 7th semester		
Person responsible for the curriculum	Huang Wutao		
Lecturer	Huang Wutao		
Language	the Chinese language		
Curriculum nature	Compulsory course		
Teaching method, teaching time	Teacher center methods (teaching, questioning, demonstration), practice methods (laboratory learning, practice)		
Workload	<p>Total class hours: 180 hours (1 credit hour =1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 64 credit hours (6 credits * 10.7 credit hours, completed in 16 weeks, an average of 4 credit hours per week, including theoretical teaching, discussion and examination).</p> <p>2. Self-study: 116 credit hours (6 credits * 19.3 credit hours, completed in 20 weeks, an average of 5.8 credit hours per week, including experiment simulation and report preparation, practice, homework, review and preparation).</p>		
Credit	6 Credits		
Recommended prerequisites	Analog electronic technology, digital electronic technology		
Learning outcomes and their corresponding ILOs	Curriculum learning results	Description	Supported learning objectives
	Learning results-1	Master the basic knowledge of the programmable logic devices and the	R1

		design process of the digital system. Ability to select applicable programmable logic devices in various design scenarios.	
	Learning results-2	Master the basic syntax of the hardware description language-VHDL. Master the use of quartus II software, and be able to use the knowledge of programming grammar learned to design simple combined logic circuit and timing logic circuit, and simulate.	R3,R5
	Learning results-3	It can design a more complex digital system according to the actual needs. Familiar with developing small and medium-sized integrated circuits based on FPGA chip design.	R1,R3,R5
Content	<p>EDA Technology and Application is an important course of electronic information engineering major. This course is offered under the rapid development of electronic design automation and the continuous improvement of system design concept and design method. This course mainly teaches the basic knowledge of EDA, programmable logic devices, EDA software application, VHDL language programming, VHDL comprehensive application example, EDA instance, etc. Through the learning of this course, students can have the ability to develop small and medium-scale integrated circuit by using hardware description language.</p> <p>Chapter I EDA Technical Overview</p> <p>Chapter II Programmable logic devices</p> <p>Chapter III Programmable logic device development software</p> <p>Chapter IV Hardware Description Language, VHDL</p> <p>Chapter V VHDL common statements</p>		

	Chapter VI Common circuit design Chapter VII The EDA instance
Study and examination requirements and forms of examination	The final exam of this course is a practical operation, and the exam time is 100 minutes. The final exam results account for 60% of the total score, and the classroom homework, extracurricular homework, questions, discussions, and experimental reports account for 40%.
Media employed	Computer, projector, blackboard, PPT courseware
Reading list	<ol style="list-style-type: none"> 1. Sun Hongguo, EDA Technology and Application, Mechanical Press, January 2019. 2. Peng Han, EDA Technology and Application, Mechanical Press, January 2019. 3. Wu Chao et al., EDA Technology and Application, Beihang University Press, May 2013.

47 High-Frequency Electronics Technology

High-Frequency Electronics Technology

Course Name	High-Frequency Electronics Technology		
Course Level	Undergraduate		
Code	05A21074		
Module	Intelligent Terminal Hardware Development Technolog		
Semester	5th Semester		
Contact Person	Cai Jiuping		
Lecturer	Cai Jiuping		
Language	Chinese		
Course Type	Core Course		
Teaching Methods	Teacher-centered approach (lectures, Q&A, demonstrations), 48 lecture hours; Practical approach (laboratory learning, exercises)		
Workload	<p>Total of 180 hours (1 hour = 1 academic hour, 1 ECTS = 30 hours)</p> <p>1.Lectures: 64 hours (6 credits * 10.7 hours, completed in 16 weeks, averaging 4 hours per week, including theoretical instruction, practical work, discussions, and exams)</p> <p>2.Self-study: 116 hours (6 credits * 19.3 hours, completed in 18 weeks, averaging 6.4 hours per week, including online courses such as Xuexitong application, exercises, assignments, and exam preparation)</p>		
Credits	6 credits		
Prerequisite Courses	Circuit Analysis, Analog Electronics, Digital Electronics		
Learning Outcomes and Corresponding Learning Objectives	Learning Outcome	Description	Supported Learning Objective
	Learning Outcome-1	Master the frequency selection characteristics of LC circuits and impedance transformation principles. Understand the characteristics and analysis	R1

		<p>methods of high-frequency small-signal amplifier circuits, high-frequency power amplifier circuits, and sinusoidal oscillators. Understand frequency conversion circuits, amplitude modulation, detection, mixing circuits, angle modulation, and demodulation circuits. </p>	
	Learning Outcome-2	<p>Understand the composition of communication systems, wireless communication systems, radio signal propagation methods, other filter technical indicators, feedback oscillators, resonant power amplifiers, frequency shifting circuits, angle modulation signals, discriminators, and special circuits in FM systems</p>	R2
	Learning Outcome-3	<p>Master the basic theories and analysis methods of high-frequency electronics, enhancing the ability to analyze and understand electronic circuits. Gain practical experience in high-frequency circuit installation, debugging methods, detection techniques, circuit stability, and anti-interference measures, thereby improving practical operation skills and problem-solving abilities. Enhancing students' abilities to analyze and solve various problems in practical electronic circuits; strengthening students' intuitive understanding of</p>	R3,R4

		<p>high-frequency signals, and improving their skills in using various electronic instruments for measuring electronic signals.</p> <p>Evaluation criteria: Upon completion of this course, students should be able to independently complete the installation and debugging of FM/AM radios.</p>	
<p>Content</p>	<p>“High-Frequency Electronics Technology” is a core foundational course for students majoring in electronic information and communication. It covers basic theories and analytical methods of high-frequency Frequency selection characteristics and impedance transformation principles of LC circuits. This course primarily teaches the basic theories, analysis methods, and applications of high-frequency circuits. The topics covered include the frequency-selective characteristics and impedance transformation principles of LC tuned circuits, the characteristics and analysis methods of high-frequency small-signal amplifier circuits, the working principles and performance of high-frequency power amplifier circuits, the principles and analysis methods of sinusoidal oscillators, the characteristics and analysis methods of frequency conversion circuits, amplitude modulation, detection and mixing circuits, and angle modulation and demodulation circuits. Through this course, students will grasp the basic structural components of wireless communication and acquire fundamental theoretical knowledge necessary for engaging in wireless communication, thereby laying a solid foundation for subsequent courses such as communication principles.</p> <p>Chapter I Introduction</p> <p>Chapter II Frequency Selection Networks and Impedance Transformation</p> <p>Chapter III High-Frequency Small-Signal Amplifiers</p> <p>Chapter IV High-Frequency Power Amplifiers</p> <p>Chapter V Sinusoidal Oscillators</p> <p>Chapter VI Frequency Shifting Circuits</p> <p>Chapter VII Angle Modulation and Demodulation Circuits</p>		
<p>Learning and Examination</p>	<p>The final exam for this course is a closed-book exam lasting 120 minutes, accounting for 60% of the total grade. Experiments, classwork, assignments, Q&A, and discussions</p>		

Requirements	make up the remaining 40%.
Media Used	Multimedia, computers, blackboard, experiment boxes with LCD platforms, Learning Pass platform, Chinese University MOOC, and online websites.
Reading List	<p>24. Yang Niqing (Ed.), <i>“High-Frequency Electronic Circuits”</i>(2nd Edition), Mechanical Industry Press, 2020.01.</p> <p>25. Chen Qixing (Ed.), <i>“Communication Electronic Circuits”</i>(3rd Edition), Tsinghua University Press, 2019.06.</p> <p>26. Chen Qixing (Ed.), <i>“Analysis and Detailed Solutions of Communication Electronic Circuit Key Points”</i>, Tsinghua University Press, 2019.11.</p> <p>27. Zhang Peiling (Ed.), <i>“High-Frequency Electronic Circuits”</i>(2nd Edition), Mechanical Industry Press, 2018.02.</p>

48 Printed Circuit Board Design and Manufacturing

Printed Circuit Board Design and Manufacturing

Course Name	Printed Circuit Board Design and Manufacturing		
Course Level	Undergraduate		
Code	05A21081		
Module	Intelligent Terminal Hardware Development Technology		
Semester	6th Semester		
Contact Person	Xiao Hailiu		
Lecturer	Xiao Hailiu, Cai Meifang		
Language	Chinese		
Course Type	Core Course		
Teaching Methods	Practical approach (on-site demonstration, practical operation) and interactive methods (group discussions, cooperation)		
Workload	<p>Total of 180 hours (1 hour = 1 academic hour, 1 ECTS = 30 hours)</p> <p>1. Lectures: 64 hours (6 credits * 10.7 hours, completed in 16 weeks, averaging 4 hours per week, including practical teaching, practical operations, and exams).</p> <p>2. Self-study: 116 hours (6 credits * 19.3 hours, completed in 18 weeks, averaging 6.4 hours per week, including online courses, classroom practice consolidation, and engineering project practice).</p>		
Credits	6 credits		
Prerequisite Courses	Analog Electronics, Digital Electronics, Microcontroller Principles and Applications		
Learning Outcomes and Corresponding Learning Objectives	Learning Outcome	Description	Supported Learning Objective
	Learning Outcome-1	Master basic operations of PCB software, including installation, authorization, editor usage, basic operations of PCB project files, and	R1

		<p>system parameter settings.</p> <p>Understand the PCB design process, schematic drawing, component design, PCB component design, and electronic process flow.</p>	
	Learning Outcome-2	<p>Identify circuit components and layout them reasonably based on performance and signal characteristics to enhance circuit performance.</p> <p>Master PCB fabrication methods and techniques, and complete PCB board production according to industry standards.</p>	R2
	Learning Outcome-3	<p>Design circuits according to engineering needs, draw schematics, and perform simulation verification.</p> <p>Use AD software for PCB design and electrical performance testing and optimization.</p> <p>Select components reasonably, install, solder, and debug circuits to complete electronic circuit design and production.</p>	R3,R5
Content	<p>1. “Printed Circuit Board Design and Manufacturing” leads the development of the electronic industry, directly impacting the quality and competitiveness of electronic products. This course includes circuit schematic design, component design, PCB component design, PCB design, and PCB fabrication processes, using Altium Designer as the teaching software. The course is project-based, following a step-by-step approach, allowing students to master PCB design methods and techniques through specific projects, deepening their understanding of electronic components and industry standards.</p> <p>Chapter I Preparatory Work for Drawing</p>		

	<p>Chapter II Simple Schematic Drawing</p> <p>Chapter III Editing and Creating Schematic Components</p> <p>Chapter IV Drawing Complex Circuit Schematics</p> <p>Chapter V Drawing Multi-layer Circuit Schematics</p> <p>Chapter VI Automatic Design of Double-sided PCBs</p> <p>Chapter VII Editing and Designing PCB Component Packages and Secondary Circuit Schematics</p> <p>Chapter VIII Manual Design of Single-sided PCBs</p> <p>Chapter IX PCB Fabrication Processes</p>
Learning and Examination Requirements	The final exam for this course is a practical operation exam lasting 120 minutes, accounting for 50% of the total grade. Class performance, training reports, and project completion rates account for the remaining 50%.
Media Used	Computers, projectors, whiteboards, PPT presentations, online platforms.
Reading List	<ol style="list-style-type: none"> 1. <i>Altium Designer PCB Design Official Guide (Basic Application)</i>, Altium China Technical Support Center, Tsinghua University Press, 2020.08.ISBN: 9787302554943 2. <i>Altium Designer Practical Tutorial</i>, You Fan, Tsinghua University Press, 2018. ISBN: 9787302477570 3. <i>Altium Designer Schematic and PCB Design Comprehensive Tutorial</i>, Liu Chao, Mechanical Industry Press, 2018.06.ISBN: 9787111571025 4. <i>Altium Designer 16 Printed Circuit Board Design</i>, Xu Min, Chemical Industry Press, 2019.07.ISBN: 9787122342263 5.I Course (Chinese University MOOC) platform: https://www.icourse163.org/course/JSIT-1206734803?from=searchPage

49 JavaScript Programming

JavaScript Programming

Course Name	JavaScript Programming		
Course Level	Undergraduate		
Code	05A211150		
Module	Intelligent Terminal Hardware Development Technology		
Semester	5th Semester		
Contact Person	Zeng Jun		
Lecturer	Zeng Jun		
Language	Chinese		
Course Type	Elective Course		
Teaching Methods	Individualized approach (programming instruction, unit teaching, independent design, computer-based teaching)		
Workload	<p>Total of 60 hours (1 hour = 1 academic hour, 1 ECTS = 30 hours)</p> <p>1. Lectures: 32 hours (2 credits * 16 hours, completed in 16 weeks, averaging 2 hours per week, including theoretical instruction, discussions, and exams).</p> <p>2. Self-study: 28 hours (2 credits * 14 hours, completed in 14 weeks, averaging 2 hours per week, including online courses, exercises, assignments, and exam preparation).</p>		
Credits	2 credits		
Prerequisite Courses	--		
Learning Outcomes and Corresponding Learning Objectives	Learning Outcome	Description	Supported Learning Objective
	Learning Outcome-1	<p>Master the basics of JavaScript; Debugging methods for C programs.</p> <p>Use HTML, CSS, and JavaScript to write Web client static pages to</p>	R1

		solve practical problems.	
	Learning Outcome-2	<p>Master the commonly used knowledge of programming conventions.</p> <p>Master the standards and guidelines for writing code, including control flow statements.</p> <p>Be able to engage in software project development and management following engineering principles and methods.</p>	R2,R3
	Learning Outcome 3	<p>Master the syntax rules of JavaScript functions</p> <p>Proficiently apply JavaScript functions to solve practical problems.</p>	R4
	Learning Outcome 4	<p>Understand the concepts of objects, BOM (Browser Object Model), DOM (Document Object Model), event handling, and regular expressions.</p>	R5
Content	<p>The course "JavaScript Programming" is an elective for the Electronic Information Engineering major. It covers the basics of JavaScript, JavaScript and CSS interaction, DOM programming, form validation, JavaScript animation effects, and more. By completing this course, students will grasp the fundamental programming concepts of JavaScript and be able to proficiently use JavaScript to control various elements of web pages, achieving tasks such as front-end validation and dynamic display. Additionally, the course aims to develop students' learning abilities, communication and teamwork skills, problem-solving capabilities, and professional conduct.</p> <p>Chapter I Introduction to JavaScript</p> <p>Chapter II Basics of JavaScript Language</p> <p>Chapter III Control Flow Statements</p>		

	<p>Chapter IV JavaScript Functions</p> <p>Chapter V Objects</p> <p>Chapter VI BOM and DOM</p> <p>Chapter VII Events and Event Handling</p> <p>Chapter VIII Forms and Form Objects</p> <p>Chapter IX Introduction to Ajax</p> <p>Chapter X JavaScript Effects</p>
Learning and Examination Requirements and Format	The final examination for this course is a practical operation, lasting 100 minutes. The final exam score accounts for 60% of the total grade, while classwork, homework, questions, and discussions make up the remaining 40%.
Media Used	Computers,Projectors,Blackboard,PPT courseware,Online websites
Reading List	<ol style="list-style-type: none"> 1. <i>JavaScript Front-end Development Programming Tutorial (Micro Course Edition)</i>, by Li Yuchen, Zang Jinmei, People's Posts and Telecommunications Publishing House, 2018, ISBN: 9787115489777 2. <i>JavaScript Programming Example Tutorial</i>, by Cheng Le, Zhang Chenxiang, Liu Wanhui, Machinery Industry Press, 2017, ISBN: 9787111421016 3. <i>JavaScript Front-end Development Case Tutorial</i>, First Edition, Black Horse Programmers, People's Posts and Telecommunications Publishing House, 2018, ISBN: 9787115443182

50 Harmony OS Device Development Fundamentals

Harmony OS Device Development Fundamentals

Course Name	Harmony OS Device Development Fundamentals		
Course Level	Undergraduate		
Code	05A211153		
Module	Smart Terminal Hardware Development Technology Module		
Semester	6th Semester		
Contact Person	Zhao Mingming		
Instructor	Zhao Mingming		
Language	Chinese		
Course Type	Elective Course		
Teaching Methods	Teacher-centered methods (lectures, questions, demonstrations); Individualized methods (programmed instruction, unit teaching, computer-assisted teaching)		
Workload	<p>Total of 90 hours (1 hour = 1 credit hour, 1 ECTS = 30 hours)</p> <p>1. Lectures: 48 hours (3 credits * 16 hours, completed in 16 weeks, averaging 3 hours per week, including theoretical teaching, discussions, and exams)</p> <p>2. Self-study: 42 hours (3 credits * 14 hours, completed in 14 weeks, averaging 3 hours per week, including online courses (Learning Pass), exercises, assignments, and exam preparation)</p>		
Credits	3 Credits		
Prerequisite Course	Principles and Applications of Microcontrollers		
Learning Outcomes and Corresponding Learning Objectives	Learning Outcome	Description	Supported Learning Objective
	Learning Outcome 1	Understand key technical principles of HarmonyOS. Learn the implementation methods and technical advantages of Harmony's	R1

		kernel subsystem, hardware driver subsystem, and file management subsystem.	
	Learning Outcome 2	<p>Master the technical principles of Harmony's memory management, queue management, interrupt management, and time management.</p> <p>Apply the learned knowledge to analyze and interpret the interactions and influences between various components within the Harmony system.</p>	R2
	Learning Outcome 3	<p>Grasp the Harmony device development process, including requirements analysis, system design, coding implementation, and testing validation.</p> <p>Learn to use IDE tools for Harmony system design and validation.</p>	R3,R4
Content	<p>The“HarmonyOS Device Development Fundamentals”course is centered around common IoT operating system knowledge points. It first introduces the development of common IoT operating systems and, based on an understanding of embedded systems, it then covers the characteristics of the HarmonyOS. Combining theory and practical operations, the course explains the principles and project-based functional design implementations of various functional modules and the porting and usage of the HarmonyOS.</p> <p>Chapter I Overview of HarmonyOS</p> <p>Chapter II Introduction to Harmony Device Development</p> <p>Chapter III HarmonyOS Kernel</p> <p>Chapter IV Harmony Hardware Driver System</p> <p>Chapter V Porting HarmonyOS</p> <p>Chapter VI HarmonyOS Cloud Connectivity</p>		

Learning and Examination Requirements and Format	The final examination for this course is open-book, lasting 120 minutes. The final exam score accounts for 70% of the total grade, while classroom assignments, homework, questions, and discussions make up the remaining 30%.
Media Used	Computers, Projectors, Blackboard, PPT courseware, Online websites
Reading List	<p>71. Yao Zhang, <i>Fundamentals of HarmonyOS Intelligent Device Development (Micro Course Edition)</i>, Tsinghua University Press, 2023.09.</p> <p>72. Jiangsu Runhe Software Co., Ltd., <i>HarmonyOS IoT - Practical Device Development</i>, Electronics Industry Press, 2021.06.</p>

51 Comprehensive Practice in Terminal Application Development

Comprehensive Practice in Terminal Application Development

Course Name	Comprehensive Practice in Terminal Application Development		
Course Level	Undergraduate		
Code	05A211154		
Module	Smart Terminal Hardware Development Technology Module		
Semester	7th Semester		
Contact Person	Yu Wenhua		
Lecturer	Yu Wenhua		
Language	Chinese		
Course Type	Elective Course		
Teaching Methods	Practical methods (laboratory learning, exercises, project practice)		
Workload	<p>Total of 90 hours (1 hour = 1 class hour, 1 ECTS = 30 hours)</p> <p>1.Lectures: 48 hours (3 credits * 16 hours, completed in 16 weeks, averaging 3 hours per week, including theoretical teaching, discussions, and exams).</p> <p>2.Self-study: 42 hours (3 credits * 14 hours, completed in 14 weeks, averaging 3 hours per week, including online courses (Learning Tong), exercises, assignments, and exam review).</p>		
Credits	3 credits		
Prerequisite Courses	——C Language Programming		
Learning Outcomes and Corresponding Learning Objectives	Learning Outcome	Description	Supported Learning Objective
	Learning Outcome-1	Master the relationship between HarmonyOS application development SDK and HarmonyOS source code;	R1

		master full-SDK compilation and replacement, and be able to complete application development project creation.	
	Learning Outcome-2	<p>Master advanced UI development skills, including the application of the "develop once, deploy everywhere" feature, and the development and application of meta-services and service cards.</p> <p>Apply acquired knowledge to select appropriate methods for requirement implementation and functional design.</p>	R3
	Learning Outcome-3	<p>Learn performance optimization methods, be able to draw the rendering process flowchart of ArkUI, analyze the causes of ArkUI interface lag, and optimize multi-threaded concurrent tasks.</p> <p>Understand the end-cloud integrated development process, master the end-cloud integrated development workflow and common features.</p>	R4,R5
Content	<p>The "Comprehensive Practice in Terminal Application Development" course emphasizes the training of students' professional abilities. The selection of theoretical knowledge closely revolves around application scenarios such as "multimedia animation," "develop once, deploy on multiple terminals," "data storage and experimentation," and "device management." It decomposes work tasks while also fully considering the need for theoretical knowledge learning in higher vocational education, focusing on knowledge, skills, and attitude requirements.</p> <p>Chapter I Overview of Advanced Courses in HarmonyOS Application Development</p> <p>Chapter II Compilation and Replacement of full-SDK</p>		

	<p>Chapter III Advanced Skills in UI Development</p> <p>Chapter IV Advanced Skills in Functional Development</p> <p>Chapter V Native API</p> <p>Chapter VI Advanced Development Theory</p> <p>Chapter VII Comprehensive Practice</p>
Study and Exam Requirements and Format	The final exam for this course is open-book, with a duration of 120 minutes. The final exam score accounts for 70% of the total grade, while class assignments, extracurricular assignments, questions, and discussions account for 30%.
Media Used	Computers, projectors, blackboards, PPT slides, online websites
Reading List	<p>73.Liu Bing, <i>From Zero to Practical HarmonyOS Application Development--Starting with Android and Succeeding with HarmonyOS</i>, China Water Power Press, 2022.07.</p> <p>74.Liu Anzhan, Yu Yuping, Chen Zhengyan, <i>HarmonyOS Mobile Application Development (ArkTS Edition)</i>, Tsinghua University Press, September 2023.09.</p>

52 Comprehensive Practice in Harmony OS Device Development

Comprehensive Practice in Harmony OS Device Development

Course Name	Comprehensive Practice in Harmony OS Device Development		
Course Level	Undergraduate		
Code	05A211155		
Module	Smart Terminal Hardware Development Technology Module		
Semester	7th Semester		
Contact Person	He Yue		
Lecturer	He Yue		
Language	Chinese		
Course Type	Elective Course		
Teaching Methods	Individualized methods (program teaching, independent design, computer teaching), interactive methods (group discussions, group design)		
Workload	<p>Total of 90 hours (1 hour = 1 class hour, 1 ECTS = 30 hours)</p> <p>1.Lectures: 48 hours (3 credits * 16 hours, completed in 16 weeks, averaging 3 hours per week, including theoretical teaching, discussions, and exams).</p> <p>2.Self-study: 42 hours (3 credits * 14 hours, completed in 14 weeks, averaging 3 hours per week, including online courses (Learning Tong), exercises, assignments, and exam review).</p>		
Credits	3 credits		
Prerequisite Courses	— Foundations of HarmonyOS Device Development, C Language Programming		
Learning Outcomes and Corresponding Learning Objectives	Learning Outcome	Description	Supported Learning Objectives
	Learning Outcome-1	Master the conceptual design of smart transportation system architecture, understanding system features and cellular technology	R1

		solutions for vehicular networks.	
	Learning Outcome-2	Understand related knowledge of hardware subsystems, IoTa subsystems, driver subsystems, etc. Be able to conduct requirement analysis and functionality implementation for IoT system design.	R3,R4
	Learning Outcome-3	Be able to think from multiple dimensions such as team collaboration, project management, and process design to analyze and design solutions for actual requirements.	R5
Content	<p>The "Comprehensive Practice in HarmonyOS Device Development" course revolves around HarmonyOS end-side development and practical application technology. The course content emphasizes training students' professional abilities. The selection of theoretical knowledge tightly focuses on various sub-scenarios in the transportation industry (communication subsystem, environmental subsystem, traffic signal subsystem, etc.), breaking down actual job tasks to reflect the required professional skills.</p> <p>Chapter I Smart Transportation Architecture</p> <p>Chapter II IoTa Hardware Subsystem</p> <p>Chapter III Driver Subsystem</p> <p>Chapter IV Communication Subsystem</p> <p>Chapter V Traffic Signal Subsystem</p> <p>Chapter VI Environmental Monitoring Subsystem</p> <p>Chapter VII Intelligent Vehicle Subsystem</p> <p>Chapter VIII Comprehensive Practical Training</p>		

Study and Exam Requirements and Format	The final exam for this course is open-book, with a duration of 120 minutes. The final exam score accounts for 70% of the total grade, while class assignments, extracurricular assignments, questions, and discussions account for 30%.
Media Used	Computers, projectors, blackboards, PPT slides, online websites
Reading List	<p>75. Qi Yaolong, <i>Theory and Practice of OpenHarmony Lightweight Device Development</i>, Electronics Industry Press, 2023.07</p> <p>76. Xu Liwen, <i>HarmonyOS Development Beginner's Guide</i>, Tsinghua University Press, 2021.07</p>

53 Computer Networks

Computer Networks

Course name	Computer Networks		
Course level	Undergraduate level		
Course code	05A221007		
Affiliated modules	Intelligent Terminal Hardware Development Technology Module		
Semester	7th semester		
Course leader	Xiong Guowen (1910-1989), writer, educator and communist politician		
Lecturer	Luo Qiqiang, Liu Yi, Xu Zhiyong, Jin Jianhua		
Language	Chinese		
Nature of the course	Elective course		
Teaching methods, hours of instruction	Teacher-centered approach (lecture, questioning, argumentation)		
Workload	<p>120 total hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 64 credit hours (4 credits*16 credit hours, completed in 16 weeks, an average of 4 credit hours per week, including theoretical teaching, discussion, experimental practical training, examination).</p> <p>2. Self-study: 120 hours (4 credits*30 hours, to be completed in 16 weeks, with an average of 7.5 hours per week, including online courses (Learning Pass), exercises, assignments, practical training reports, and review and preparation for exams).</p>		
ETCS Credits	4 credit points		
Recommended prerequisites	<i>Introduction to Artificial Intelligence Technology; Computer Fundamentals</i>		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning objectives(ILOs)
	CLO-1	Understand the seven-layer model design of computer networks and the	R1

		<p>role and function of each of the physical, data link, network, transport, session, and representation layers, and the application layer when communicating on a computer network;</p> <p>Knowledge of the fundamentals of the principles of computer network communications;</p>	
	CLO-2	<p>Utilize the principles of computer networks and network communication protocols learned to parse common problems in complex computer communication projects;</p> <p>Designing enterprise networks and proposing solutions;</p>	R2
	CLO-3	<p>Enhance students' interest in learning computer network subjects, be able to continue to learn computer network-related knowledge and constantly update their knowledge, and have the ability to adapt to the development of society and the computer network communication industry;</p> <p>Enhance communication and teamwork skills, analyze and solve problems.</p>	R3, R4

Content	<p>The main contents of the <i>Computer Networks</i> course include an overview, the physical layer, the data link layer (including local area networks), the network layer and network interconnections, the transportation layer, network applications, and network security in seven areas. The aim is to enable students to master the architecture of computer networks and popular reference models, master the basic principles of physical layer standards and data communication technology, master the working principles of data link layer protocols and common examples, master the basic principles of local area networks and networking methods, master the basic principles of wide area networks and access methods, master the basics of network interconnections and the operation of IP protocols, master the principles of the transport layer protocols and TCP, UDP protocols, and the working principles of TCP, UDP protocols, and the operation of the transport layer protocols. The course will master the working principle of transport layer protocols and TCP and UDP protocols, the working principle of common protocols and network services at the application layer, as well as the method of application system architecture, and the cutting-edge technology of the development of computer network technology, so as to lay a solid foundation for cultivating the students' ability in the planning and construction of computer network systems, and the establishment and development of network application systems.</p> <p>Chapter I Overview</p> <p>Chapter II Physical Layer</p> <p>Chapter III Data Link Layer</p> <p>Chapter IV Network Layer and Network Interconnection</p> <p>Chapter V Transportation layer</p> <p>Chapter VI Web Applications</p> <p>Chapter VII Network security</p>
Study and examination requirements and forms of examination	<p>The final examination of the course is a practical operation, the examination time is 120 minutes, and the final examination grade is 50% of the total grade, and the performance of experimental practical training, practical training report, classroom assignments, questions, discussions, etc. are 50%.</p>
Media employed	<p>Computer, projector, blackboard, PPT courseware, online website</p>

Reading List	<p>28. A Tutorial on Computer Networks, Xie Xiren, The People's Posts and Telecommunications Press, February 2018, 5th edition, ISBN: 9787115475817.</p> <p>29. Fundamentals of Computer Network Technology, Yun Yang, The People's Posts and Telecommunications Press, September 2021, Microform Edition, ISBN: 9787115566447.</p> <p>30. A Course in Computer Networking, Ligang Han, The People's Posts and Telecommunications Press, January 2021, Microform Edition, ISBN: 9787115537652.</p> <p>31. Fundamentals of Computer Networks, Huang Lingguo, Tsinghua University Press, May 2021, Second Edition, ISBN: 9787302569831.</p>
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54 Programmable Controller Principles and Applications

Programmable Controller Principles and Applications

Course name	Programmable Controller Principles and Applications		
Course level	Undergraduate level		
Course code	05A21097		
Affiliated Modules	Intelligent Terminal Hardware Development Technology Module		
Semester	6th semester		
Course leader	Feng Shuling		
Lecturer	Feng Shuling		
Language	Chinese		
Nature of the course	Elective course		
Teaching methods	Teacher-centered methods (lecturing, questioning); interactive methods (group discussion, group design); hands-on methods (field teaching)		
Workload	<p>120 total hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 64 hours (4 credits*16 hours, completed in 16 weeks, average 4 hours per week, including theoretical teaching, experiments, discussions and examinations).</p> <p>2. Self-study: 56 hours (4 credits*14 hours, to be completed in 14 weeks, averaging 4 hours per week, including online courses, exercises, assignments, reports, and exam preparation).</p>		
ETCS Credits	4 credit points		
Recommended prerequisites	<i>Circuit Analysis; Digital Electronics</i>		
Learning outcomes and their corresponding ILOs	Course learning outcome (CLO)	Description	Supported Intended Learning objectives (ILOs)

	CLO-1	Master the basic concepts of PLC, development history, can correctly choose PLC, know the composition and basic working principle of PLC; master the PLC internal soft components, basic instructions, functional instructions. Be able to deal with control problems related to stepping motor, be able to use pulse width modulation function to deal with voltage regulation problems, and know the high-speed output function of PLC.	R1
	CLO-2	Master the basic principles and steps of PLC control system design, to be able to analyze the various types of mechanical equipment on the production site for the electrical control requirements, and through the analysis of the PLC solution to carry out the design of PLC systems, commissioning work.	R2
	CLO-3	In the face of PLC control of various types of mechanical equipment, can quickly understand its work process, understand its electrical wiring, able to diagnose and deal with various types of system failures.	R3, R4
Content	Programmable Controller Principles and Applications is an elective course for electronic information engineering majors, requiring students to systematically master the internal structure of the PLC, the instruction system, programming and other content, to train students for PLC selection, installation, wiring, system analysis, design and operation and maintenance capabilities. To enable students to engage in industrial electrical control work necessary for the theoretical and practical basis. At the same time for the subsequent		

	<p>professional courses and engineering practice to lay a solid foundation. Specific content is as follows.</p> <p>Part I PLC Hardware Basics and System Composition</p> <p>1.1 S7-200 SMART Series PLCs</p> <p>1.2 Logic operations and PLC's working principle</p> <p>Part II STEP7 SMART Programming Software Usage</p> <p>2.1 Programming Software Overview</p> <p>2.2 Program writing and downloading</p> <p>2.3 Use of symbol tables and symbol addresses</p> <p>2.4 Monitoring and debugging the program with programming software</p> <p>Part III S7-200 SMART Programming Basics</p> <p>3.1 PLC programming language and program structure</p> <p>3.2 Data Types and Addressing Methods</p> <p>3.3 Bit Logic Instructions, Timers, Counters</p> <p>Part IV S7-200 SMART Functional Instructions</p> <p>4.1 Data processing instructions</p> <p>4.2 Mathematical arithmetic instructions</p> <p>4.3 Program Control Instructions</p> <p>4.4 Local Variables and Subroutines</p> <p>4.4 Interrupt Programs and Interrupt Instructions</p> <p>Part V Control System Ladder Programming Methods</p> <p>5.1 Empirical Programming Method</p> <p>5.2 Sequential Control Design Method and Sequential Function Diagrams</p>
<p>Study and examination requirements and forms of examination</p>	<p>The final exam for the course is a hands-on, 120-minute exam consisting of 60% of the total grade for the final and 40% of the usual grades (assignments, lab reports, questions, discussions). Students must earn a final grade of 60 or higher to pass the course.</p>
<p>Media employed</p>	<p>Projector, whiteboard, PPT courseware, computer, website</p>
<p>Reading List</p>	<p>1.S7-200SMART PLC Programming and Applications (3rd Edition), Liao Changchu, Mechanical Industry Press, 2019.05, 3rd Edition, 9787111618249</p> <p>2.S7-200 SMARTPLC Complete Mastery Tutorial, Xiang Xiaohan, Mechanical Industry Press, 2015.10,4th Edition, 9787111434429</p> <p>Other resources: Bilibili, Chinese college students Mooc platform, etc.</p>

55 Electronic Measurement

Electronic Measurement

Course name	Electronic Measurement		
Course level	Undergraduate level		
Course code	05A21145		
Affiliated Modules	Intelligent Terminal Hardware Development Technology Module		
Semester	6th semester		
Course leader	Liu Yanqi		
Lecturer	Liu Yanqi		
Language	Chinese		
Nature of the course	Elective course		
Teaching methods, hours of instruction	Teacher-centered approach (lecture, questioning, argumentation), hands-on approach (lab learning, practice)		
Workload	<p>Total 90 hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 48 hours (3 credits*16 hours, completed in 16 weeks, an average of 3 hours per week, including theoretical teaching, experiments, discussions, examinations).</p> <p>2. Self-study: 42 hours (3 credits*14 hours, to be completed in 14 weeks, averaging 3 hours per week, including exercises and assignments, review and preparation for exams).</p>		
ETCS Credits	3 credit points		
Recommended prerequisites	<i>Circuit Analysis; Analog Electronics; Digital Electronics</i>		
Learning outcomes and	Course Learning Outcome (CLO)	Description	Supported Intended Learning

their corresponding ILOs			objectives(ILOs)
	CLO-1	Knowledge of the concepts and characteristics of electronic measurements; knowledge of common instruments and common methods and principles of electronic measurements.	R1
	CLO-2	Understand the basic concepts of error, be able to measure errors, and be able to process the results.	R2
	CLO-3	1、 Knowledge of frequency and time measurement techniques, voltage measurement techniques, waveform testing techniques, impedance measurement techniques, waveform testing techniques, phase difference measurement techniques to achieve prediction of electronic measurement problems.	R5
Content	<p>Electronic Measurement is an elective course for Electronic Information Engineering majors, whose prerequisite courses are Circuit Analysis, Analog Electronics Technology, Digital Electronics Technology and other courses. This course enables students to master the basic theories of modern electronic measurement and the principles and applications of electronic measurement instruments, to develop advanced testing programs in scientific experiments or production practice, to reasonably select measuring instruments, and to correctly process the test data in order to obtain the best test results. This course plays an important role in the knowledge structure of the professional curriculum system, and lays the foundation for the cultivation of students' engineering quality and innovation ability in the training of professional talents.</p> <ol style="list-style-type: none"> 1. Basic knowledge of electronic measurement 2. Measurement errors and processing of measurement results 3. Frequency and time measurement techniques 4. Voltage Measurement Technology 5. Waveform Test Technology 		

	<p>6. Impedance Measurement Techniques</p> <p>7. Phase Difference Measurement Technique</p>
<p>Study and examination requirements and forms of examination</p>	<p>The final exam for the course is a hands-on, 100-minute exam, with 60% of the total grade for the final exam and 40% for classroom assignments, extracurricular assignments, questions, discussions, and lab reports.</p>
<p>Media employed</p>	<p>Computer, projector, whiteboard, PowerPoint courseware</p>
<p>Reading List</p>	<ol style="list-style-type: none"> 1. Fundamentals of Electronic Measurement Technology . Zhang, Y.R.. Xi'an University of Electronic Science and Technology Press. 2021, 9787560662619. 2. Electronic Measurement Technology. Tian Hua. Xi'an University of Electronic Science and Technology Press. Third Edition.2018. 9787560649672. 3. Fundamentals of Electronic Measurement Technology. Wang Sun Yafei. Xi'an University of Electronic Science and Technology Press. 2023. 9787560668628.

56 Intelligent Electronic Product Design Debugging

Intelligent electronic product design debugging

Course name	Intelligent electronic product design debugging		
Course level	Undergraduate level		
Course code	05A21147		
Affiliated Modules	Intelligent Terminal Hardware Development Technology Module		
Semester	6th semester		
Course leader	Liu Yanqi		
Lecturer	Wei Yanping Xiao Hailiu		
Language	Chinese		
Nature of the course	Elective course		
Teaching methods, hours of instruction	Teacher-centered approach (lecture, questioning, argumentation)		
Workload	<p>120 total hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 64 hours (4 credits*16 hours, completed in 16 weeks, an average of 4 hours per week, including theoretical teaching, discussion and examination).</p> <p>2. Self-study: 56 hours (4 credits*14 hours, to be completed in 14 weeks, averaging 4 hours per week, including online courses (University MOOC), exercises, assignments, and review for exams).</p>		
ETCS Credits	4 credits		
Recommended prerequisites	<i>Circuit Analysis, Analog Electronics, Digital Electronics, Micro-controller Principles and Applications.</i>		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning objectives(ILOs)
	CLO-1	Master the fundamentals of intelligent electronic product design: Students will be able to	R1

		<p>understand and apply the basic principles and concepts of smart electronic product design, such as circuit design, microcontroller technology, and sensor applications. And students will be able to apply this knowledge to solve real-world problems, such as designing simple smart electronic product systems.</p>	
	CLO-2	<p>Familiar with intelligent electronic product development and debugging process:</p> <p>Students will learn and be familiar with the complete process of intelligent electronic products from demand analysis, program design, hardware and software development to system testing and debugging; able to design solutions for complex engineering problems, design circuit systems to meet specific needs, unit circuits Students will master the basic skills of experimentation and debugging, and will be able to independently carry out the production of circuit boards, the writing of software and the debugging of the system.</p>	R2
	CLO-3	<p>A team player with a creative spirit:</p> <p>Students will learn to collaborate in teams to complete the design and development tasks of smart electronic products, cultivating teamwork awareness and communication skills; students will have the ability to learn independently and continuously, and be able to identify and solve problems in the learning process;</p>	R3, R4

		students will be encouraged to come up with innovative ideas and solutions, cultivating innovative thinking and entrepreneurial awareness.	
Content	<p><i>Intelligent Electronic Product Design and Debugging</i> is an elective course for Electronic Information Engineering majors, whose prerequisite courses are Circuit Analysis, Analog Electronics Technology, Digital Electronics Technology, Microcontroller Principles and Applications. This course is based on the design and production of an electronic product-function signal generator as the main line, so that students learn to master the circuit design of electronic products, circuit simulation, PCB design and production, circuit board installation and debugging and simple troubleshooting knowledge. So that students have the hardware circuit design of electronic products, welding, debugging ability to improve the students' practical ability, the ability to use instruments and meters, data and results of the analysis and processing capabilities. Improve the comprehensive quality and vocational ability of students and lay the foundation for their career development.</p> <p>Chapter I Circuit Design and Fabrication Flow of STM32-based Core Boards</p> <p>Chapter II Introduction to the STM32 Core Board</p> <p>Chapter III STM32 Core Board Program and Verification</p> <p>Chapter IV STM32 Core Board Soldering</p> <p>Chapter V Introduction to Litron EDA</p> <p>Chapter VI STM32 Core Board Schematic Design</p> <p>Chapter VII S TM32 Core Board PCB Design</p> <p>Chapter VIII Creating a Component Library</p> <p>Chapter IX Exporting Production Files</p> <p>Chapter X Making Circuit Boards</p>		
Study and examination requirements and forms of examination	<p>The course concludes with a 120-minute final exam on a short paper, which is worth 60% of the total grade and 40% of the classroom work, out-of-class assignments, questions, and discussions.</p>		

Media employed	Computer, projector, blackboard, PPT courseware, online website
Reading List	<p>The textbook must contain information:</p> <p><i>Development, Design and Production of Electronic Products</i>. Wang Junfeng. People's Posts and Telecommunications Publishing House. First Edition. 2014. 9787115128508</p> <p><i>Fundamentals of Electronic Design and Production</i>. Wang Gangyuan. Jiangxi Science and Technology Press. First Edition. 2014. 9787539044736</p> <p>I Course (Chinese University MOOC) Platform.</p> <p>https://www.icourse163.org/course/HPU-1449724166?from=searchPage</p>

57 Sensor Networks Application Development

Sensor Networks Application Development

Course name	Sensor Networks Application Development		
Course level	Undergraduate level		
Course code	05A21082		
Affiliated Modules	Intelligent Terminal Hardware Development Technology Module		
Semester	7th semester		
Course leader	Zhang Mingde (1904-1989), PRC revolutionary and martyr		
Lecturer	Zhang Mingde (1904-1989), PRC revolutionary and martyr		
Language	Chinese		
Nature of the course	Elective course		
Teaching methods, hours of instruction	Teacher-centered approach (lecture, questioning, argumentation)		
Workload	<p>Total 90 hours (1 credit hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Lecture: 48 hours (3 credits * 16 hours, completed in 16 weeks, an average of 3 hours per week, including theoretical teaching, experiments, discussions and examinations).</p> <p>2. Self-study: 42 hours (3 credits*14 hours, to be completed in 14 weeks, averaging 3 hours per week, including exercises and assignments).</p>		
ETCS Credits	3 credit points		
Recommended prerequisites	<i>The C programming Language; Micro-controller Principles and Applications; Sensing and Detection technology</i>		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning objectives(ILOs)
	CLO-1	Students have mastered the core knowledge of the composition of sensor nodes, communication protocols and data fusion, laying a solid foundation for subsequent	R1

		application development, i.e., students are able to deeply understand the theoretical knowledge of the sensor network, form a solid professional foundation, and provide theoretical support for subsequent practical applications.	
	CLO-2	Through course learning and practical operation, students are able to combine theoretical knowledge with practical problems and design sensor network applications that meet the needs, such as environmental monitoring and smart home. That is, students are able to apply what they have learned to solve practical problems, cultivate innovative thinking and practical ability, and prepare for future work in related fields.	R2
	CLO-3	Students are able to work in teams to accomplish more complex sensor network application development tasks. Students not only acquired specialized knowledge, but also learned how to communicate and collaborate effectively in a team. The development of this outcome will help students to better integrate into the team in their future work and improve their overall work efficiency.	R3, R4

Content	<p>Application Development for Sensor Networks is a comprehensive course covering a wide range of areas including the Internet of Things, embedded systems, wireless communications, and data processing. The following is a description of the main teaching content of the course:</p> <ol style="list-style-type: none"> 1. Overview 2. WSN communication and networking technology 3. IEEE802.15.4 protocol standard 4. WSN key technologies 5. ZigBee technology 6. Node design 7. Bluetooth technology 8. 6LOWPAN technology
Study and examination requirements and forms of examination	<p>The final exam for the course is open-book, 120 minutes in length, with 60% of the total grade for the final exam and 40% of the total grade for the regular grades (10% attendance, 10% homework, 20% practical training report)</p>
Media employed	Computers, projectors, amplifiers, whiteboards
Reading List	<ol style="list-style-type: none"> 1. Textbook : Wireless Sensor Network Technology and Applications, Ping Wang, The People's Posts and Telecommunications Press, 2016 , ISBN: 9787115410726 <p>Refer to the textbook:</p> <ol style="list-style-type: none"> 2. Principles and Applications of Wireless Sensor Network Technology, Xu Yi, Tsinghua University Press, 2019.01, Second Edition, ISBN: 9787302459910 3. Wireless Sensor Networks: Theory and Applications, Sun Limin, Tsinghua University Press, 2018.08, ISBN: 9787302499947 4. Digital course website: https://www.icourse163.org/course/BUPT-1458695162?from=searchPage <p>MOOC for Chinese Universities, <i>Fundamentals and Applications of Wireless Internet of Things</i></p>

Module Six Interdisciplinary Module

58 College English I

College English I

Curriculum Name	College English I		
Curriculum Level	Undergraduate Level		
Code	03A21001		
Module	Interdisciplinary Module		
Semester	Semester 1		
Course Manager	Zou Weiwei		
Lecturer	<p>○Yang Min ○Li Xinjuan ○Zou Weiwei ○Fu Xiaomi ○Xiong Ying ○Pan Guopei ○Zhang Yan</p> <p>★Yu Chunyan ★Li Linxia ★Chen Xijuan ★Ouyang Defang ★Ye Sujuan ★Zhang Xue</p>		
Language	Chinese & English		
Course Nature	Compulsory Course		
Teaching Methods	Teacher centered methods (teaching, questioning), individualized methods (unit teaching), and practical methods (role-playing)		
Workload	<p>Total Teaching Hours: 112 hours (1 class hour=1 hour, 1ECTS=28 hours)</p> <p>1.Teaching: 64 hours (4 credits x 16 hours, completed in 16 weeks, with an average of 4 hours per week, including theoretical teaching, practical teaching, discussion, etc.).</p> <p>2.Self study hours: 48 hours (4 credits x 12 hours, completed in 20 weeks, with an average of 2.4 hours per week, including pre-class preparation, online learning, post class review, practice, homework, and exam preparation).</p>		
ECTS Credits	4 credit points		
Recommended Prerequisites	—		
Learning	Course Learning Outcome	Description	Supported

Outcomes and Their Corresponding ILOs	(CLO)		Intended Learning Objective (ILOs)
	CLO-1	Assist students in mastering basic knowledge of English phonetics and grammar, as well as new vocabulary in college English I reading, writing, translation learning and audio-visual training. The individual English vocabulary of students is close to 4000 words, laying a knowledge foundation for achieving the language comprehensive ability level required by CET-4.	R5
	CLO-2	Gradually improve the students' comprehensive language application ability of English listening, speaking, reading, writing and translating, so that they have the ability to obtain English information on the Internet and books and lifelong learning ability, have a certain ability to conduct professional and work exchanges in English, and have the ability to read and translate English materials related to work or professional learning and research with the help of dictionaries, so as to prepare for the translation part of CET-4.	R8,R9
	CLO-3	Improve the moral cultivation of students, teach students how to be a man, to learn, to be grateful, to socialize, to communicate and cooperate. The goal is always to cultivate students into law-abiding	R10,R12

		citizens who are physically and mentally healthy, qualified, and able to serve socialism.	
Content	<p><i>College English I</i> is a core general education course in our university's college English teaching. It is a compulsory course for first-year students and is offered in the first semester. The teaching hours of the course are 64 hours, 4 hours per week, and the course credits are 4 credits. College English is a teaching system that mainly focuses on English language knowledge and application skills, learning strategies, and cross-cultural communication, guided by foreign language teaching theories, and integrates various teaching modes and methods. It is a course that combines basic English knowledge and applied skills with students' majors, committed to cultivating their English application abilities to meet the needs of China's economic development and international communication. This course consists of three parts, namely comprehensive, listening and speaking, and practical, which aims to cultivate students' English language skills, English expression ability, and practical English application ability.</p> <p>Unit1 Don't Give Up</p> <p>Unit 2 Why We Buy</p> <p>Unit 3 Green Living</p> <p>Unit 4 Food Journeys</p> <p>Unit 7 Music with a Message</p> <p>Unit 8 The Power of Images</p>		
Study and Examination Requirements and Forms of Examination	<p>The final exam for this course will be closed book examination, with a duration of 120 minutes. The final grade of this course consists of a final exam and a process assessment. Among them, the final exam score accounts for 70% of the total score, the performance in the process assessment (including attendance, discussion, etc.) accounts for 15%, and homework and practice (including in class and out of class) account for 15%. Students must achieve a final score of 60 or above in order to pass.</p>		
Media Employed	Computer, projector, blackboard, Power Point, and online website		
Reading List	<ol style="list-style-type: none"> 1. <i>New Horizon College English (Viewing, Listening & Speaking)</i>, Chief editor: Xu Zhong. Foreign Language Teaching and Research Press, 2011; 2. <i>21 Century College English (Viewing, Listening & Speaking)</i>, Chief editor: Wang Rongpei, Shi Jian, Zou Shen, Foreign Language Teaching and Research Press, 2010; 3. <i>21 Century College English for Interactive Purpose</i>, Chief editor: Wang Rongpei, Shi Jian, Zou Shen, Foreign Language Teaching and Research Press, 2014; 		

4. *Practical English for Job-hunting*, Chief editor: Liu Tongling, Chen Lili, Fudan University Press, 2015;

5. *Spoken English for College*, Chief editor: Guo Jing, Xiao Dejun, Beijing University of Posts and Telecommunications Press, 2012.

59 College English II

College English II

Curriculum Name	College English II		
Curriculum Level	Undergraduate Level		
Code	03A21002		
Module	Interdisciplinary Module		
Semester	Semester 2		
Course Manager	Zou Weiwei		
Lecturer	○Zou Weiwei ○Yang Min ○Chen Jieming ○Fu Xiaomi ○Xiong Ying ○Pan Guopei ○Zhong Guyi ○Jiang Lan ★Yu Chunyan ★Zhang Guannan ★Zhang Yao ★Chen Xijuan		
Language	Chinese & English		
Course Nature	Compulsory Course		
Teaching Methods	Teacher centered methods (teaching, questioning), individualized methods (unit teaching), and practical methods (role-playing)		
Workload	Total Teaching Hours: 112 hours (1 class hour=1 hour, 1ECTS=28 hours) 1.Teaching: 64 hours (4 credits x 16 hours, completed in 16 weeks, with an average of 4 hours per week, including theoretical teaching, practical teaching, discussion, etc.). 2.Self study hours: 48 hours (4 credits x 12 hours, completed in 20 weeks, with an average of 2.4 hours per week, including pre-class preparation, online learning, post class review, practice, homework, and exam preparation).		
ECTS Credits	4 credit points		
Recommended Prerequisites	College English I		
Learning Outcomes and Their	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)

Corresponding ILOs	CLO-1	Assist students in mastering basic knowledge of English phonetics and grammar, as well as new vocabulary in College English II for reading, writing, translation and audio-visual training. The individual English vocabulary of students is close to 4500 words, laying a solid foundation for achieving the language comprehensive ability level required by CET-4.	R5
	CLO-2	Further improve the students' comprehensive language application ability of English listening, speaking, reading, writing and translating, so that they have the ability to obtain English information on the Internet and books and the ability to learn for life, have a certain ability to communicate in English for professional and work, and have the ability to read and translate English materials related to work or professional learning and research with the help of dictionaries.	R8,R9
	CLO-3	Adhere to the combination of knowledge imparting and value guidance, cultivate college students to establish correct ideals, beliefs, values, political beliefs, and social responsibilities, integrate socialist core values into teaching, adhere to integrating ideological and political education into college English teaching, enhance the affinity of	R10,R12

		ideological and political education and the correct value orientation of college English courses, cultivate students' patriotism, as well as correct outlook on life, world, and values.	
Content	<p><i>College English II</i> is a core general education course in our university's college English teaching. It is a compulsory course for first-year students and is offered in the second semester. The teaching hours of the course are 64 hours, 4 hours per week, and the course credits are 4 credits. College English is a teaching system that mainly focuses on English language knowledge and application skills, learning strategies, and cross-cultural communication, guided by foreign language teaching theories, and integrates various teaching modes and methods. It is a course that combines basic English knowledge and applied skills with students' majors, committed to cultivating their English application abilities to meet the needs of China's economic development and international communication. This course consists of three parts, namely comprehensive, listening and speaking, and practical, which aims to cultivate students' English language skills, English expression ability, and practical English application ability.</p> <p>Unit 1 Happiness</p> <p>Unit 2 Inventive Solutions</p> <p>Unit 3 Connected Lives</p> <p>Unit 4 Saving Our Seas</p> <p>Unit 5 Memory and Learning</p> <p>Unit 8 Smart Advice</p>		
Study and Examination Requirements and Forms of Examination	<p>The final exam for this course will be closed book examination, with a duration of 120 minutes. The final grade of this course consists of a final exam and a process assessment. Among them, the final exam score accounts for 70% of the total score, the performance in the process assessment (including attendance, discussion, etc.) accounts for 15%, and homework and practice (including in class and out of class) account for 15%. Students must achieve a final score of 60 or above in order to pass.</p>		
Media Employed	Computer, projector, blackboard, Power Point, and online website		

Reading List	<ol style="list-style-type: none"> 1. <i>New Horizon College English (Viewing, Listening & Speaking)</i>, Chief editor: Xu Zhong. Foreign Language Teaching and Research Press, 2011; 2. <i>21 Century College English (Viewing, Listening & Speaking)</i>, Chief editor: Wang Rongpei, Shi Jian, Zou Shen, Foreign Language Teaching and Research Press, 2010; 3. <i>21 Century College English for Interactive Purpose</i>, Chief editor: Wang Rongpei, Shi Jian, Zou Shen, Foreign Language Teaching and Research Press, 2014; 4. <i>Practical English for Job-hunting</i>, Chief editor: Liu Tongling, Chen Lili, Fudan University Press, 2015; 5. <i>Spoken English for College</i>, Chief editor: Guo Jing, Xiao Dejun, Beijing University of Posts and Telecommunications Press, 2012.
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60 College English III

College English III

Curriculum Name	College English III		
Curriculum Level	Undergraduate Level		
Code	03A21003		
Module	Interdisciplinary Module		
Semester	Semester 3		
Course Manager	Zou Weiwei		
Lecturer	○Liu Liwen ○Fu Xiaomi ○Wu Jie ○Zhang Guannan ○Zou Weiwei ★Yu Chunyan ★Li Linxia ★Rao Yao ★Zhang Yao		
Language	Chinese & English		
Course Nature	Compulsory Course		
Teaching Methods	Teacher centered methods (teaching, questioning), individualized methods (unit teaching), and practical methods (role-playing)		
Workload	Total Teaching Hours: 60 hours (1 class hour=1 hour, 1ECTS=30 hours) 1.Teaching: 32 hours (2 credits x 16 hours, completed in 16 weeks, with an average of 2 hours per week, including theoretical teaching, practical teaching, discussion, etc.). 2.Self study hours: 28 hours (2 credits x 14 hours, completed in 20 weeks, with an average of 1.4 hours per week, including pre-class preparation, online learning, post-class review, practice, homework, and exam preparation).		
ECTS Credits	2 credit points		
Recommended Prerequisites	College English II		
Learning Outcomes and Their Corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	Assist students in mastering the basic knowledge of English	R5

		<p>phonetics and grammar, mastering new vocabulary in the comprehensive English learning and listening training of College English III, and achieving an individual English vocabulary of over 4700 words, laying a solid knowledge foundation for students of different levels to achieve the language comprehensive ability level required by CET-4 and CET-6.</p>	
	CLO-2	<p>Further improve students' comprehensive language application ability of English listening, speaking, reading, writing and translating, gradually strengthen their ability to obtain English information on the Internet and books and lifelong learning ability. Empower them with the ability to communicate professionally and work more skillfully in English, to read and translate English materials related to work or professional learning and research with the help of dictionaries, and to better cope with the translation part of CET-4 and CET-6.</p>	R8,R9
	CLO-3	<p>Adhere to the combination of knowledge imparting and value guidance, cultivate college students to establish correct ideals, beliefs, values, political beliefs, and social responsibilities, integrate socialist core values into teaching, adhere to integrating ideological and political</p>	R10,R12

		education into college English classroom teaching, enhance the affinity of ideological and political education and the correct value orientation of college English courses, cultivate students' patriotism, as well as correct outlook on life, world, and values.	
Content	<p><i>College English III</i> is a core general education course in our university's college English teaching, and is a compulsory course for second year students. The course is offered in the third semester of university and is a continuous advanced English learning program following College English II. The teaching hours of College English III course are 32 hours, 2 hours per week, and the course credits are 2 credits. College English is a teaching system that mainly focuses on English language knowledge and application skills, learning strategies, and cross-cultural communication, guided by foreign language teaching theories, and integrates various teaching modes and methods. It is a course that combines basic English knowledge and applied skills with students' majors, committed to cultivating their English application abilities to meet the needs of China's economic development and international communication. This course consists of three parts, namely comprehensive, listening and speaking, and practical, which aims to cultivate students' English language skills, English expression ability, and practical English application ability. This course is assisted by online teaching platforms to cultivate students' self-learning ability, meet the needs of personalized learning, and rely on the second classroom to cultivate their practical application abilities.</p> <p>Unit 1 Working Holiday Abroad</p> <p>Unit 2 Conspicuous Consumption</p> <p>Unit 3 Cultural Differences</p>		
Study and Examination Requirements and Forms of Examination	<p>The final exam for this course will be closed book examination, with a duration of 120 minutes. The final grade of this course consists of a final exam and a process assessment. Among them, the final exam score accounts for 70% of the total score, the performance in the process assessment (including attendance, discussion, etc.) accounts for 15%, and homework and practice (including in class and out of class) account for 15%. Students must achieve a final score of 60 or above in order to pass.</p>		
Media Employed	Computer, projector, blackboard, Power Point, and online website		

Reading List	<ol style="list-style-type: none"> 1. <i>New Horizon College English (Viewing, Listening & Speaking)</i>, Chief editor: Xu Zhong. Foreign Language Teaching and Research Press, 2011; 2. <i>21 Century College English (Viewing, Listening & Speaking)</i>, Chief editor: Wang Rongpei, Shi Jian, Zou Shen, Foreign Language Teaching and Research Press, 2010; 3. <i>21 Century College English for Interactive Purpose</i>, Chief editor: Wang Rongpei, Shi Jian, Zou Shen, Foreign Language Teaching and Research Press, 2014; 4. <i>Practical English for Job-hunting</i>, Chief editor: Liu Tongling, Chen Lili, Fudan University Press, 2015; 5. <i>Spoken English for College</i>, Chief editor: Guo Jing, Xiao Dejun, Beijing University of Posts and Telecommunications Press, 2012.
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61 College English IV

College English IV

Curriculum Name	College English IV		
Curriculum Level	Undergraduate Level		
Code	03A21004		
Module	Interdisciplinary Module		
Semester	Semester 4		
Course Manager	Zou Weiwei		
Lecturer	○Li Ling ○Zhang Guannan ○Zou Weiwei ○Liu Liwen ★Rao Yao ★Hu Qifan ★Yu Chunyan ★Li Linxia		
Language	Chinese & English		
Course Nature	Compulsory Course		
Teaching Methods	Teacher centered methods (teaching, questioning), individualized methods (unit teaching), and practical methods (role-playing)		
Workload	Total Teaching Hours: 60 hours (1 class hour=1 hour, 1ECTS=30 hours) 1.Teaching: 32 hours (2 credits x 16 hours, completed in 16 weeks, with an average of 2 hours per week, including theoretical teaching, practical teaching, discussion, etc.). 2.Self study hours: 28 hours (2 credits x 14 hours, completed in 20 weeks, with an average of 1.4 hours per week, including pre-class preparation, online learning, post-class review, practice, homework, and exam preparation).		
ECTS Credits	2 credit points		
Recommended Prerequisites	College English III		
Learning Outcomes and Their Corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	Assist students in mastering the basic knowledge of English	R5

		<p>phonetics and grammar, mastering new vocabulary in the comprehensive English learning and listening training of College English IV, and achieving an individual English vocabulary of over 5000 words, laying a solid knowledge foundation for students of different levels to achieve the language comprehensive ability level required by CET-4 and CET-6.</p>	
	CLO-2	<p>Further improve students' comprehensive language application ability of English listening, speaking, reading, writing and translating, gradually strengthen their ability to obtain English information on the Internet and books and lifelong learning ability. Empower them with the ability to communicate professionally and work more skillfully in English, to read and translate English materials related to work or professional learning and research with the help of dictionaries, and to better cope with the translation part of CET-4 and CET-6.</p>	R8,R9
	CLO-3	<p>Improve students' moral cultivation, teach them how to be a good person, learn how to learn, be grateful, communicate, and cooperate. The goal is always to cultivate students into law-abiding citizens who are physically and mentally healthy, qualified, and able to serve</p>	R10,R12

		socialism. Adhere to integrating ideological and political education into the teaching of college English classrooms, enhance the affinity of ideological and political education and the correct value orientation of college English courses, cultivate students' patriotism, as well as correct outlook on life, world, and values.	
Content	<p><i>College English IV</i> is a core general education course in our university's college English teaching, and is a compulsory course for second year students. The course is offered in the fourth semester of university and is a continuous advanced English learning program following College English III. The teaching hours of College English IV course are 32 hours, 2 hours per week, and the course credits are 2 credits. College English is a teaching system that mainly focuses on English language knowledge and application skills, learning strategies, and cross-cultural communication, guided by foreign language teaching theories, and integrates various teaching modes and methods. It is a course that combines basic English knowledge and applied skills with students' majors, committed to cultivating their English application abilities to meet the needs of China's economic development and international communication. This course consists of three parts, namely comprehensive, listening and speaking, and practical, which aims to cultivate students' English language skills, English expression ability, and practical English application ability. This course is assisted by online teaching platforms to cultivate students' self-learning ability, meet the needs of personalized learning, and rely on the second classroom to cultivate their practical application abilities.</p> <p>Unit 4 The Travel Business</p> <p>Unit 5 Global Challenges</p> <p>Unit 6 Medical Innovations</p>		
Study and Examination Requirements and Forms of Examination	<p>The final exam for this course will be closed book examination, with a duration of 120 minutes. The final grade of this course consists of a final exam and a process assessment. Among them, the final exam score accounts for 70% of the total score, the performance in the process assessment (including attendance, discussion, etc.) accounts for 15%, and homework and practice (including in class and out of class) account for 15%. Students must achieve a final score of 60 or above in order to pass.</p>		
Media Employed	Computer, projector, blackboard, Power Point, and online website		

Reading List	<ol style="list-style-type: none"> 1. <i>New Horizon College English (Viewing, Listening & Speaking)</i>, Chief editor: Xu Zhong. Foreign Language Teaching and Research Press, 2011; 2. <i>21 Century College English (Viewing, Listening & Speaking)</i>, Chief editor: Wang Rongpei, Shi Jian, Zou Shen, Foreign Language Teaching and Research Press, 2010; 3. <i>21 Century College English for Interactive Purpose</i>, Chief editor: Wang Rongpei, Shi Jian, Zou Shen, Foreign Language Teaching and Research Press, 2014; 4. <i>Practical English for Job-hunting</i>, Chief editor: Liu Tongling, Chen Lili, Fudan University Press, 2015; 5. <i>Spoken English for College</i>, Chief editor: Guo Jing, Xiao Dejun, Beijing University of Posts and Telecommunications Press, 2012.
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62 Career and Development Planning

Career and Development Planning

Curriculum Name	Career and Development Planning		
Curriculum Level	Undergraduate Level		
Code	10A21001		
Module	Interdisciplinary Module		
Semester	Semester 3		
Course Manager	Wang Lijuan		
Lecturer	Wang Lijuan, Cui Xuechen, Chen Yingpeng		
Language	Chinese		
Course Nature	Compulsory Course		
Teaching Methods	Teacher centered methods (teaching, questioning, discussion)		
Workload	<p>Total Teaching Hours: 30 hours (1 class hour=1 hour, 1ECTS=30 hours)</p> <p>1. Teaching: 20 hours (1 credits x 16 hours, completed in 20 weeks, with an average of 1 hours per week, including theoretical teaching, practical teaching, and exam).</p> <p>2. Self study hours: 10 hours (1 credits x 10 hours, completed in 10 weeks, with an average of 1 hours per week, including online courses (SuperStarLearn, exercises, homework, review and preparation).</p>		
ECTS Credits	1 credit point		
Recommended Prerequisites	—		
Learning Outcomes and Their Corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)

	CLO-1	<p>Master the concept of career planning and the steps of making career planning;</p> <p>Understand the importance of career planning and the relationship between university life, university life and career development.</p>	R7
	CLO-2	<p>Be able to use literature, employment service platform, career assessment and other tools to explore career personality, interests, values, abilities, environment and goals.</p> <p>When faced with problems in school, career and life, the students can effectively use the decision-making thinking methods they have learned to make the best choice.</p>	R9,R10
	CLO-3	<p>Master the use of employment resources; Understand the work world related to the profession, understand the professional qualities valued by employers, understand the connotation of employability and the effective ways to improve employment competitiveness.</p> <p>Inspire students to make career plans and take actions to prepare for future employment.</p>	R7,R8
	CLO-4	<p>Master the theory of person-job matching, scientifically analyze the gap between personal reality and goal requirements, and learn to use</p>	R10,R12

		<p>career decision-making methods.</p> <p>Be able to formulate reasonable and feasible career plans based on the current career environment, national policies and social needs, and learn to feedback and revise career development plans.</p>	
Content	<p><i>Career and Development Planning</i> is a public compulsory course for all students. The main contents include college life and career development, understanding of self, understanding of environment, career decision, career planning and implementation. Through planning and guiding students' career development, students can master the basic knowledge and common methods of career planning, establish correct career ideal and career outlook, career choice outlook, entrepreneurship outlook and talent outlook, correctly understand the relationship between study and employment, form the ability of career planning, and enhance the consciousness of improving professional quality and professional ability. Be prepared to adapt to society, integrate into society and meet the challenges of employment and entrepreneurship.</p> <p>Chapter 1 Life Development and Career Planning</p> <p>Chapter 2 Overview of Career Planning</p> <p>Chapter 3 Self-exploration</p> <p>Chapter 4 Occupational Social Cognition</p> <p>Chapter 5 Career Decision</p> <p>Chapter 6 The Formulation and Implementation of College Career Planning</p> <p>Chapter 7 University Academic Planning</p> <p>Chapter 8 Rules for University Extracurricular Activities</p> <p>Chapter 9 Self-management</p> <p>Chapter 10 Teamwork and Leadership Development</p>		
Study and Examination Requirements and Forms of Examination	<p>The final exam of the course is open book, the exam time is 100 minutes, and the final exam score is 100 points, and the activities are carried out in the form of lectures, discussions, themed class meetings, job fairs, information meetings, and enterprise visits.</p>		
Media Employed	<p>Computer, projector, blackboard, Power Point, and online website</p>		

Reading List	<p>32. Pan Xulong, Yuan Long, Chu Dongqing, <i>Career Development and Quality Training of College Students</i>, Nankai University Press, 2018.7.</p> <p>33. Pan Shihua, Qiu Jian, Wei Yiwen, <i>Career Planning for College Students</i>, Southwestern University of Finance and Economics Press, 2019.8.</p> <p>34. Chen Zhibin, <i>Career Planning</i>, Shanghai Jiaotong University Press, 2021.4.</p>
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63 Employment Guidance for College Students

Employment guidance for college students

Curriculum name	Employment guidance for college students		
Curriculum level	Undergraduate level		
Curriculum code	10A21002		
Belonging module	Interdisciplinary module		
Semester	The 6th semester		
Person responsible for the curriculum	Wang Lijuan		
Lecturer	Wang Lijuan, Cui Xuechen		
Language	Chinese		
Curriculum character	Compulsory curriculum		
Teaching methods	Teacher centered approach (teaching, questioning, group discussion, role simulation)		
Workload	<p>Total class hours 30 hours (1 class hour = 1 hour, 1 ECTS = 30 hours)</p> <p>1. Teaching: 20 class hours (1 credit * 20 class hours, completed in 20 weeks, 1 class hour per week on average, including theoretical teaching, discussion and examination).</p> <p>2. Self study: 10 class hours (1 credit * 10 class hours, completed in 10 weeks, with an average of 1 class hour per week, including online learning, exercise, homework, review and test preparation).</p>		
ECTS Credit	1 credit points		
Recommended prerequisites	Career and development planning		
Learning outcomes and their corresponding ILOs	Course learning Outcome	Description	Supported Intended Learning Objective (ILOs)

	Learning Outcome-1	Grasp the current employment situation and policies, and define career goals. Be able to learn the method of career orientation and establish professional norms.	R7
	Learning Outcome-2	Master the basic channels for collecting employment information and precautions during the interview. Be able to produce a resume that attracts HR, master interview skills and be able to cope with the interview.	R8, R9
	Learning Outcome-3	Master and consolidate interview skills and workplace etiquette, improve communication and exchange skills, and improve the ability to apply for jobs. Be able to use the knowledge learned to interact and influence in simulated interview practice.	R8, R9, R10
	Learning Outcome-4	Master and consolidate interview skills and workplace etiquette, improve communication and exchange skills, and improve the ability to apply for jobs. Be able to use the knowledge learned to interact and influence in simulated interview practice.	R8
	Learning Outcome-5	Understand the graduate employment flow chart, master the employment process and the procedures for handling	R12

		relevant procedures. Be able to use the knowledge learned to sign tripartite agreements and complete graduation procedure	
Content	<p><i>College Students' Employment Guidance</i> course is a public compulsory course for all students in the University. The purpose is to familiarize graduates with the country's employment policies and regulations through systematic teaching activities, and adapt to the current employment situation. Employment knowledge and skills, that is, through career guidance, employment guidance and entrepreneurship guidance, to help college graduates understand the information of social needs, establish a correct concept of career selection, enhance the awareness of career selection, master the methods and skills of job hunting, and continuously improve the ability to actively adapt to social needs. Be prepared for employment and entrepreneurship, and successfully realize employment and entrepreneurship.</p> <p>Chapter 1 Employment Forms and Policies for College Students</p> <p>Chapter 2 The Employment Concept and Employment Psychology of College Students</p> <p>Chapter 3 Employment Quality and Ability of College Students</p> <p>Chapter 4 Career Positioning and Choice of College Students</p> <p>Chapter 5 Instructions for Group Employment</p> <p>Chapter 6 Preparation of Job Search Materials</p> <p>Chapter 7 Written Examination and Interview</p> <p>Chapter 8 Employment Rights and Interests and Protection of College Students</p> <p>Chapter 9 Workplace Adaptation and Development of College Students</p>		
Study and examination requirements and forms of examination	<p>The final examination of the curriculum is open-paper. The examination time is 100 minutes, the final examination score is 100 points, case analysis accounts for 30%, resume production accounts for 70%, and activities are carried out in the form of lectures, symposiums, thematic class meetings, job fairs, seminars, enterprise visits, etc.</p>		
Media employed	<p>Computer, Projector, blackboard, PPT, Online website</p>		

Reading list	<p>35. Gao Jinglong, Fan Fuqiang, Zhang Linyan, Employment Guidance for College Students, Education Science Press, 2021.8.</p> <p>36. Yang Zhixiong, Chen Jie, Suo Xinyu, Employment Guidance for College Students, Aviation Industry Press, 2019.12.</p>
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64 Foundation of Entrepreneurship

Foundation of entrepreneurship

Curriculum name	Foundation of entrepreneurship		
Curriculum level	Undergraduate level		
Curriculum code	10A21003		
Belonging module	Interdisciplinary module		
Semester	The 4th semester		
Person responsible for the curriculum	Qiu Shuying		
Lecturer	Duan Yanbei, Pan Yue		
Language	Chinese		
Curriculum character	Compulsory courses		
Teaching methods	Teacher center method; individualized method; practical method (teaching, unit teaching, simulation)		
Workload	<p>Total class hours: 60 hours (1 class hour=1 hour, 1 ECTS=30 hours)</p> <p>1. Teaching: 32 class hours (2 credits * 16 class hours, completed in 16 weeks, average 2 class hours per week, including theoretical teaching and unit teaching).</p> <p>2. Self study: 28 class hours (2 credits * 14 class hours, completed in 14 weeks, with an average of 2 class hours per week, including chapter test, simulation, review and test preparation).</p>		
ECTS Credit	2 credit points		
Recommended prerequisites	nothing		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	Through teaching, students can clearly understand the importance of	R9

		<p>entrepreneurship, improve their entrepreneurial awareness and entrepreneurial quality, understand the struggles of some successful people, gain some experience, understand some forms of entrepreneurship, improve their entrepreneurial awareness, cultivate their patriotic feelings, guide students to establish a standardized and correct concept of employment and entrepreneurship, and train their professional quality of interpersonal communication.</p>	
	CLO-2	<p>Through teaching, students can understand the evaluation criteria of the business plan, and accurately master the nine-step business model design steps and enterprise management communication skills. Expand entrepreneurial thinking and improve innovation awareness and entrepreneurial skills.</p>	R10
	CLO-3	<p>Through teaching, students can deeply understand the concept of entrepreneurship and its relationship with entrepreneurship, understand the quality of entrepreneurs and the importance of entrepreneurial teams, learn how to master the core</p>	R11

		elements of entrepreneurial opportunity identification, risk prevention, resource integration, business model design, financing strategies, etc., and learn to use the knowledge learned to think about and solve the practical problems of entrepreneurial enterprise operation.	
Content	<p><i>Foundations of Entrepreneurship</i> is a course that integrates knowledge, theory and practice to cultivate the innovative entrepreneurial spirit of college students. Introduce the basic elements and characteristics of entrepreneurship, entrepreneurial ability and opportunities, entrepreneurial team and resources, help learners master the basic theory of entrepreneurship, familiarize themselves with the basic process of entrepreneurship, stimulate learners' awareness of innovation, improve their entrepreneurial ability and sense of social responsibility, and guide them from entrepreneurial ideas to entrepreneurial practice.</p> <p>Chapter 1 Entrepreneurship, entrepreneurship and life development</p> <p>Chapter 2 Entrepreneurship People and entrepreneurial team</p> <p>Chapter 3 Entrepreneurship Plan to start a new enterprise</p> <p>Chapter 4 Marketing management, financial management and customer management in the early stage of entrepreneurship</p> <p>Chapter 5 Create a ten-page perfect plan</p> <p>Chapter 6 Nine-step business model design steps</p>		
Study and examination requirements and forms of examination	The final exam of this course is for examination, and the final score accounts for 60% of the total score, and the chapter test and chapter study account for 40%.		
Media employed	Computer, PPT courseware, Online website		

Reading list	<p>37. Li Xiaoming, Introduction to College Students' Entrepreneurship (Applied Talent Training Planning Textbook • Public Basic Course Series), Tsinghua University Press, April 2011</p> <p>38. Liu Ping, Entrepreneurship: Principles and Practice, Tsinghua University Press, 2008</p> <p>39. Zhao Yanchen, China Entrepreneurship, China Renmin University Press, published on July 1, 2010</p> <p>40. Wu Guisheng, Gao Jian, Innovation and Entrepreneurial Management (Volume 6) - an album on innovative ways, Tsinghua University Press, published in December 2010</p> <p>41. Zhang Yaohui, Introduction to Entrepreneurship: Principles, Training and Applications, China Machine Press, May 1, 2011</p>
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65 Theory of Inventive Problem Solving

Theory of Inventive Problem Solving

Curriculum name	Theory of Inventive Problem Solving		
Curriculum level	Undergraduate level		
Curriculum code	09A21004		
Belonging module	General Education Public Course		
Semester	The 6th semester		
Person responsible for the curriculum	Hu Gang		
Lecturer	Hu Gang		
Language	Chinese		
Curriculum character	Elective		
Teaching methods	The combination of classroom teaching and discussion. Theoretical explanation, class sharing, case teaching, group discussion, classroom simulation teaching.		
Workload	<p>Total class hours: 30 hours (1 class hour=1 hour, 1 ECTS=28 hours)</p> <p>1. Teaching: 16 class hours (1 credit * 16 class hours, completed in 8 weeks, average 2 class hours per week, including theoretical teaching, discussion, practice, etc.).</p> <p>2. Self study: 14 class hours (1 credit * 14 class hours, completed in 7 weeks, with an average of 2 class hours per week, including pre class preview, online learning, post class review, exercise, homework, and test preparation).</p> <p style="text-align: center;">Among them, 30 class hours for theory and 0 class hours for practice.</p>		
Credit points	1 credit points		
Recommended prerequisites	_____		
Learning outcomes and their	Course Learning Outcome (CLO)	Description	Supported Intended Learning

corresponding ILOs			Objective (ILOs)
	CLO-1	innovative thinking methods, technological system evolution rules, 40 principles of invention and application, as well as the process of patent formation and application.	R5
	CLO-2	Master the technical contradiction and its solution, physical contradiction and its solution, the general solution of the physical field model, master the application skills of the wisdom extraction theory, and enhance the innovation ability and awareness of solving production engineering problems.	R7, R12
Content	<p><i>Cuizhi Theory</i> is a public elective course for full-time students in our school, which is the Ministry of Education. The curriculum required to be included in the teaching plan is an important course for college students to strengthen innovative education and improve innovative thinking and methods. This course can help students from the aspects of TRIZ innovative thinking method, the law of technological system evolution, 40 invention principles and application, technical contradictions and their solution, physical contradictions and their solution, material-field model and other aspects, taking the objective evolution law of technical system and the evolution of creative thinking method as the main line, revealing T The logical correlation between RIZ tools expounds the main ideas and application methods contained in TRIZ tools, thus providing theoretical materials and methodological guidance for students to engage in technological innovation in different industries in the future.</p> <p>Chapter 1 Overview of TRIZ</p> <p>Chapter 2 TRIZ Innovative Thinking Method</p> <p>Chapter 3 The law of technological system evolution</p> <p>Chapter 4 Article 40 Invention Principle and Application</p> <p>Chapter 5 Technical contradictions and their solution</p> <p>Chapter 6 Physical contradictions and their solutions</p> <p>Chapter 7 Field Model</p> <p>Chapter 8 Formation and Application of Patents</p>		

Study and examination requirements and forms of examination	The final examination method of this course is a small paper. The final score of the course consists of a final examination and a process assessment. Among them, the final examination results accounted for 70% of the total evaluation, attendance accounted for 40% in the process assessment, homework accounted for 30%, and the composition of the discussion was 30%. Students must get a final score of more than 60 points to pass.
Media employed	Computer, Projector, blackboard, PPT courseware, Online website
Reading list	1. 《TRIZ Innovative Thinking and Methods: Theory and Application》 Li Meifang Zhao Yongxiang Mechanical Industry Press 2016-09-30

66 College Chinese

College Chinese

Curriculum name	College Chinese
Curriculum level	Undergraduate level
Curriculum code	03A21021
Belonging module	Interdisciplinary module

Semester	The first semester		
Person responsible for the curriculum	Luo Qing		
Lecturer	Wu Xiaojuan, Zhao Ajuan, Dang Yatian, Wang Huan, Xiong Fangfang, Zhang Jinwen		
Language	Chinese		
Curriculum character	Compulsory courses		
Teaching method	Teacher centered approach (teaching, questioning, argumentation)		
Workload	<p>Total class hours: 60 hours (1 class hour=1 hour, 1 ECTS=30 hours)</p> <p>1. Teaching: 32 class hours (2 credits * 16 class hours, completed in 16 weeks, with an average of 2 class hours per week, including theoretical teaching, discussion, and examination).</p> <p>2. Self study: 28 class hours (2 credits * 14 class hours, completed in 14 weeks, with an average of 2 class hours per week, including reading ancient and modern Chinese and foreign classics, exercises after class, and making a three minute speech PPT before class).</p>		
Credit point	2 credit points		
Recommended prerequisites	Nothing		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	Learn the masterpieces of ancient and modern Chinese and foreign masters, and master some basic knowledge of literature, including text, common sense of representative writers and works, recognition and interpretation of key words; Be familiar with the content of the text	R6, R7

		and understand the basic principles of literature appreciation; Master the analysis method of the text theme and core ideas.	
	CLO-2	Be able to combine Chinese knowledge with the professional courses for creative learning, especially to understand and inherit the excellent traditional culture of the Chinese nation; Improve the students' ability of thinking and logical judgment, especially the grasp of the writer's intention and emotion of literary works; Through learning, students' ability to correctly understand and use Chinese language and characters will be cultivated so that they can skillfully use basic Chinese knowledge for daily communication and writing.	R10
	CLO-3	Guide students to pay attention to current affairs and politics in teaching, enhance patriotism, cultivate a sense of responsibility and responsibility, and help students establish a correct world outlook, outlook on life and values; Use divergent thinking in teaching to teach students to think independently, cultivate their sense of innovation, and help students improve their humanistic literacy.	R12

Content	<p><i>College Chinese</i> belongs to the theoretical knowledge education system in the talent training program, and is a public basic compulsory course for undergraduate students. The course pays attention to the organic integration of college students' humanistic literacy and the cultivation of comprehensive language ability, so that students can understand the classic works of ancient and modern Chinese and foreign writers, expand their horizons from the reading and appreciation of ancient and modern literary masterpieces, feel the beauty of excellent literary works, profound thoughts and the power of personality, and promote the rise of students' ideological realm. The shaping of Huahe's sound personality enhances its national self-confidence, self-esteem, pride and patriotism. Under the premise of strengthening the humanistic sentiment of college students, further explore the creative spirit of students and promote the improvement of the core quality of students' Chinese.</p> <p>Lesson 1 Introduction to College Chinese</p> <p>Lesson 2 Working with Wisdom 1- Selected Lectures: Eight Articles of <i>The Analects of Confucius</i></p> <p>Lecture 3: Dealing with affairs with wisdom 2- Selected lectures: Eight selected lectures of <i>The Analects of Confucius: Zheng Burke Duan Yu Yan</i></p> <p>Lecture 4: Working with Wisdom 3- Selected Lectures: <i>Zheng Boke Duan Yu Yan</i></p> <p>Lecture 5: Doing Things with Wisdom 4- Selected Lectures: New Words of the World (excerpts)</p> <p>Lesson 6 Broad mindedness 1- Selected lecture: Li Bai's <i>Farewell to Shuyun at Xietiao Mansion in Xuanzhou</i></p> <p>Lesson 7 Broad mindedness 2- Selected lectures: Tao Yuanming's <i>Miscellaneous Poems</i></p> <p>Lecture 8 Warm Heart 1- Selected Lectures: Tang Xianzu's <i>Garden Fantasy</i></p> <p>Lesson 9 Warm Heart 2- Selected Lectures: Zhu Ziqing's <i>Winter</i></p> <p>Lesson 10 Warm Heart 3- Selected Lectures: Turgenev's <i>The Village</i></p> <p>Lecture 11 Family and Country Feelings 1- Selected Lectures: Lu You's <i>Guan Shan Yue</i></p> <p>Lecture 12 Feelings of Family and Country 2- Selected Lectures: Xin Qiji's "<i>Water Dragon Singing, Climbing Jiankang Pavilion</i></p> <p>Lesson 13 Family and Country Sentiment 3- Selected Lectures: Whitman's <i>Ah, Captain, My Captain</i></p> <p>The 14th Rationality came out 1- Selected lectures: Qian Daxin's <i>Yi Yu</i></p> <p>Lecture 15 Rationality Comes into the World 2- Selected Lectures: Han Yu's <i>The Original Destruction</i></p>
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	Lesson 16 Course Summary
Study and examination requirements and examination form	<p>The final exam of the course is closed, and the examination time is 120 minutes. The final score of the course consists of the final examination and process assessment.</p> <p>Among them, the final examination results account for 70% of the total evaluation, and the processIn the assessment, attendance accounted for 30%, homework accounted for 30%, classroom performance accounted for 30%, and class notes accounted for 10%. Students must get a final score of more than 60 points to pass.</p>
Media employed	Projector, blackboard, PPT courseware
Reading list	<p>42. Editor-in-chief of Zhang Pengzhen, Xi Yulian and Wang Rui. <i>College Chinese</i>. Science Press. 2014.</p> <p>43. Xu Zhongyu. Qi Senhua. Editor-in-chief <i>University Language</i> (10th edition). East China Normal University Press. 2013.</p> <p>44. Chen Hong. Editor-in-chief of <i>University Language</i> (Third Edition).Higher Education Press. 2016.</p>

67 Modern Enterprise Management

Modern Enterprise Management

Curriculum name	Modern Enterprise Management
Curriculum level	Undergraduate level
Curriculum code	07A21002
Belonging module	Interdisciplinary module
Semester	The 3rd semester
Person responsible for the curriculum	She Caiyan
Lecturer	○Fu Fangl,○Tu Jun, ★Fengyuan Mao
Language	Chinese
Curriculum character	Elective
Teaching methods	Teacher centered methods (teaching, questioning, argumentation, etc.); Interaction method
Workload	Total class hours: 60 hours (1 class hour=1 hour, 1 ECTS=30 hours) 1. Teaching: 32 class hours (2 credits * 16 class hours, completed in 16 weeks, average 2 class hours per week, including theoretical teaching, discussion, practice, etc.). 2. Self study: 28 class hours (2 credits * 14 class hours, completed in 14 weeks, with an average of 2 class hours per week, including pre class preview, online learning, post class review, exercise, homework, and test preparation).
Credit points	2 credit points
Recommended prerequisites	_____

	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
Learning outcomes and their corresponding ILOs	CLO-1	Master the basic principles and methods of modern enterprise management, obtain the basic ideas of enterprise management, and enhance the basic awareness of enterprise management.	R11
	CLO-2	Master the basic characteristics of modern enterprises and modern management; understand the development trend, modern enterprise system and organizational structure of modern enterprise management; master the basic contents of modern enterprise strategic management, marketing management, production management, quality management, human resources management, etc.	R8,R10,R11
	CLO-3	Be able to use the knowledge learned to analyze some phenomena related to enterprise management in real economic life, and have the ability to initially solve the practical problems of enterprise management.	R9
	CLO-4	Help students Understand the background of enterprise management activities and the national development strategy, guide students to pay attention to the practice of enterprise management, be able to use relevant theories and methods to analyze specific	R6,R7

	problems in the management of various industrial and commercial enterprises, and improve their professional quality.	
Content	<p><i>Modern Enterprise Management</i> is a comprehensive quality course for undergraduate majors, which is a necessary knowledge preparation for students to understand the issues related to enterprise management in economic life. The main contents of the course include introduction to enterprise management, the formation and evolution of management theory, modern enterprise system, enterprise strategic management, marketing management, production and quality management, human resources management, etc. Through the study of this course, students can understand and master the basic concepts, basic theories andThe basic method is to cultivate the decision-making, organization, coordination and leadership skills required by students to carry out management activities in modern enterprises, enhance the awareness of enterprise management, and cultivate the basic qualities that enterprise managers should have to meet the needs of social and economic life.</p> <p>Chapter 1 Introduction to Enterprise Management</p> <p>Chapter 2 The Formation and Evolution of Management Theory</p> <p>Sequence Chapter 3 Modern Enterprise System</p> <p>Sequence Chapter 4 Enterprise Strategic Management</p> <p>Sequence Chapter 5 Marketing Management</p> <p>Sequence Chapter 6 Production Management</p> <p>Sequence Chapter 7 Quality Management</p> <p>Sequence Chapter 8 Human Resources Management</p>	
Study and examination requirements and examination form	<p>The final exam of this course is an open book exam, and the exam time is 100 minutes.</p> <p>The final score of the course consists of final examination and process assessment.</p> <p>Among them, the final exam score accounts for 70% of the total score, the usual performance (including attendance, discussion, etc.) in the process assessment accounts for 18%, and the homework and practice (including in class and out of class) accounts for 12%. Students must obtain a final score of more than 60 points to pass.</p>	
Media employed	Computer,Projector, blackboard,PPT courseware,Online website	

Reading list	<ol style="list-style-type: none">1. Modern Enterprise Management Wang Guanyi, et al. Tsinghua University Press, July, 2003 5th Edition ISBN: 978-7-302-63839-12. Enterprise Management Yuan Yu, Zhan Shubin China Machine Press May 2016 Version 1 ISBN: 978-7-111-53735-93. Modern Enterprise Management Gao Haichen China Machine Press, March 2018 3rd Edition ISBN: 978-7-111-59108-5

68 Literature Search

Literature Search

Curriculum name	Literature Search
Curriculum level	Undergraduate level
Curriculum code	12A21001
Belonging module	Interdisciplinary module
Semester	The 4th semester
Person responsible for the curriculum	Lu Ximei
Lecturer	○Deng Wei,○Wang Fengying,○Yin Xiaoyan,☆○Yang Ting,☆○Lin Rong,☆Yang Yang
Language	Chinese
Curriculum character	Compulsory courses
Teaching methods	Teacher centered approach (teaching, questioning, argumentation)
Workload	Total class hours: 30 hours (1 class hour=1 hour, 1 ECTS=30 hours) Teaching: 16 class hours (1 credit * 16 class hours, completed in 16 weeks, 1 class hour per week on average, including theoretical teaching, discussion and examination). Self study: 14 class hours (1 credit * 14 class hours, completed in 14 weeks, 1 class hour per week on average, including exercise, homework, and retrieval exercise).
Credit points	1 credit point
Recommended prerequisites	—None

	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
Learning outcomes and their corresponding ILOs	CLO-1	To enable students to understand the concept of information retrieval, the type of information retrieval, the principle of information retrieval, and the concept and classification of information retrieval language; Master the basic technology of information retrieval, understand the strategies and effects of information retrieval, and lay the foundation for the training of practical skills by learning theoretical knowledge.	R5
	CLO-2	Enable students to carry out general search, cross-library retrieval, advanced search, original download and export references in professional databases; master the main search engines and their search methods, such as the use of grammar in Baidu search engines, understand the acquisition and utilization of open access resources, and then quickly obtain network information. Learners can master the basic concepts and operation methods of common databases/search engines, improve the ability of literature retrieval, data collection and analysis, and lay a solid foundation for	R5

		scientific research.	
	CLO-3	By learning and mastering the use of the examination system and duplication checking system, students can effectively prepare and complete the examination certificate and dissertation, and improve academic integrity and thesis quality.	R9
Content	<p><i>Literature Search</i> is a basic education course in the talent training program. This course is conducted by combining theoretical explanation and practical operation, aiming to enable students to improve their practical operation ability while mastering theoretical knowledge. Through the study of this course, students will master the basic principles, methods and skills of literature retrieval, and can effectively obtain and use various information resources. It is a course to cultivate students' information literacy and retrieval skills.</p> <p>Chapter 1 Information and Information Resources</p> <p>Chapter 2 Information Resource Retrieval</p> <p>Chapter 3 Chinese and Foreign Literature Information Database Retrieval</p> <p>Chapter 4 Retrieval of Network Information Resources</p>		

	<p>Chapter 5 Usage of Examination System and Weight Checking System</p> <p>Chapter 6 Experimental Assessment</p>
Study and examination requirements and examination form	<p>The final exam of this course is a large assignment, and the exam time is 90 minutes. The final exam score accounts for 70% of the total score, and attendance, homework and discussion account for 30%.</p>
Media employed	<p>Computer, Projector, blackboard, PPT courseware, Online website</p>
Reading list	<p><i>Document Information Retrieval and Utilization</i>, University of Electronic Science and Technology Press, March 2018.</p> <p><i>Document Information Retrieval</i>, China Textile Press, September 2016 Textbook of the 13th Five Year Plan.</p> <p>3. Edited by Zeng Yingzi <i>Information Retrieval and Utilization</i>, Sichuan University Press, November 2012.</p>

69 Social Etiquette

Social Etiquette

Course Name	Social Etiquette		
Level	Undergraduate		
Code	07A21003		
Course Module	Interdisciplinary Module		
Semester	The Fifth Semester		
Responsible Person	Chen Chengyan		
Lecturer	☆Chen Chengyan, ☆Li Chuanjuan, ☆○Wen Lunqin, Wang xiaoli, Xiong Shanmei		
Language	Chinese		
Course Nature	Compulsory		
Teaching methods	Teacher-oriented methods (lectures, questions, argumentation etc.); Interactive methods (whole class discussion, group discussion, peer teaching); Practical methods (role playing, simulation and games, exercises)		
Workload	<p>30 class hours in total (1 class hour =1 hour, 1 ECTS=30 hours)</p> <p>1. Teaching: 16 hours (1 credit *16 hours, completed in 8 weeks, an average of 2 hours per week, including theoretical teaching, discussion, scene performance, etc.).</p> <p>2. Self-study: 14 hours (1 credit *14 hours, completed in 7 weeks, an average of 2 hours per week, including pre-class preview, online learning, after-class review, exercises, homework, mind map drawing).</p>		
ECTS Credits	1 credit point		
Recommended prerequisites	---		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	Through in-depth study and practice of	R9

		social etiquette, students can enhance personal image temperament and build a good personal image. By mastering proper appearance, elegant manners and proper speech, students can show a confident, steady and professional image in various social occasions, and win the respect and trust of others.	
	CLO-2	Through in-depth study and practice of social etiquette, students can better communication skills, listening skills, appropriate diction and tone, and effective non-verbal communication, enabling themselves to express their views and intentions more clearly, while also better understand the ideas and needs of others. Thus, it can promote effective communication, interpersonal relationship building, and enhance team cooperation as well as professional capacities, helping to achieve personal goals.	R10
	CLO-3	The study of social etiquette can further help students enhance their cultural sensitivity. In cross-cultural communication, students can respect and understand the differences and characteristics of different cultures to avoid unnecessary conflicts and misunderstandings caused by cultural shocks. The increased cultural sensitivity helps us play a better role in international exchanges and cooperation, creating more opportunities for personal growth and team development.	R9,R10

Content	<p>“Social Etiquette” is an important quality education course, which is highly theoretical and practical. The course focuses on the study of knowledge on basic etiquette, supplemented by on-site simulation training and practical training experience activities. Through teachers’ systematic teaching, guidance and demonstration as well as students’ practical skills training, the course helps students master the basic principles and skills of social etiquette and improve their performance and image in social occasions. Through the course study, students can not only master the basic knowledge and skills of social etiquette, but also use them flexibly in practice to improve their social ability and image, and hopefully to become polite and cultured social talents. The course also emphasizes the importance of behaving in a polite and appropriate manner to interact with others and transmit social information in different social situations, in accordance with cultural traditions and ethical norms. Through theoretical explanation and practical practice, students will understand the concept, function and importance of social etiquette, master the basic requirements of social etiquette in formal and informal occasions, and cultivate their self-confidence, communication skills, teamwork spirit and mutual aid consciousness.</p> <p>Teaching Unit 1 An overview of etiquette</p> <p>Teaching Unit 2 Personal images</p> <p>Item Two Personal Image Etiquette – Grooming</p> <p>Item Three Personal image Etiquette – Appearance</p> <p>Item Four Personal image Etiquette – Deportment</p> <p>Teaching Unit 3 Daily communication etiquette</p> <p>Item 5 Salutation and handshake etiquette</p> <p>Item 6 Introduction, business card etiquette</p> <p>Teaching Unit 4 Dining etiquette</p> <p>Teaching Unit 5 Travel and ritual etiquette</p>
Study and examination requirements and forms of examination	<p>The final exam of the course is an open-book exam, which lasts 100 minutes. The final grade of the course consists of a final exam and a process assessment. Among them, the final exam score accounts for 50% of the total assessment, and the daily performance (including attendance, class activities, discussions, etc.) in the process assessment accounts for 50%. Students must obtain a final grade of 60 or more to pass.</p>
Media employed	<p>Computer, projector, blackboard, PPT courseware, related props and experimental materials, online website</p>

<p>Reading List</p>	<ol style="list-style-type: none"> 1. <i>Interpersonal Communication and Social Etiquette</i>. Luo Yuanhao et al. Tsinghua University Press. January 2020, 1st Ed. ISBN: 9787302554851 2. <i>Book of Rites (2 Volumes)</i>. Hu Pingsheng, Zhang Meng. Zhonghua Book Company. November 2017, ISBN:9787101128567 3. <i>Etiquette in China</i>. Hai Ying. Beijing Normal University Press. November 2021, ISBN: 9787303273171 4. <i>Reception Etiquette (Second Edition)</i>. Kim Jung-kun. China Renmin University Press. June 2015, ISBN: 9787300212777 5. <i>Business Etiquette</i>. Gong Huang. People's Posts and Telecommunications Press. June 2023, ISBN: 9787115611512 6. <i>Etiquette Norms and Training (2nd Edition)</i>. Wang Menglu, Zhang Shijing. Tsinghua University Press, March 2024, ISBN: 9787302654728
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70 Social Practice I

Social Practice I

Course Name	Social Practice I		
Level	Undergraduate		
Code	13A21004		
Course Module	Interdisciplinary Module		
Semester	The First Semester		
Responsible Person	Zhang Weiyan		
Lecturer	○ Li Shilong ○ Li Shuyao ○ Liu Xiaoyan ★ Lu Huna ★ Peng Wenqian ★ Wan Mingxuan ★ Yang Yuanhang ★ Ye Wei ★ Zhong Liping		
Language	Chinese		
Course Nature	Compulsory		
Teaching methods	Teacher-oriented methods (lectures and questions); Practical methods (on-the-spot teaching)		
Workload	<p>30 class hours in total (1 class hour =1 hour, 1 ECTS=30 hours)</p> <p>1. Teaching: 4 hours (1 credit *4 hours, completed in 2 weeks, an average of 2 hours per week, including theory teaching, discussion, examination).</p> <p>2. Self-study: 26 hours (1 credit *26 hours, completed in 13 weeks, an average of 2 hours per week, including practice, homework, review for exams).</p>		
ECTS Credits	1 credit point		
Recommended prerequisites	—		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	To guide students to understand the meaning of college students' social practice as well as its characteristics	R8,R12

		and principles and recognize the important significance of social practice for their own growth and development; Enable students to master the research methods of college students' social practice.	
	CLO-2	Enable students to understand the formulation of college students' social practice plan; Follow the objective laws of social practice activities and learn to design social practice projects and plan preparation.	R9,R10
Content	<p>“Social Practice I” is an important course of ideological and political education for college students, and is an important part of higher education teaching plan. Using the teaching methods of centralized teaching training and on-site practice guidance, teachers lead students to fully understand the requirements of society for outstanding talents on the basis of understanding the national conditions. While students strengthen their political, ideological and theoretical education, emphasis is placed on cultivating and exercising the consciousness and ability of college students to apply and develop knowledge in social practice.</p> <p>Chapter 1 Introduction to college students' social practice</p> <p>Chapter 2 Plan of college students' social practice</p>		
Study and examination requirements and forms of examination	The final exam of this course is a large assignment, the exam time is 120 minutes, and the final exam score is 100%.		
Media employed	Computer, projector, blackboard, PPT courseware		
Reading List	<ol style="list-style-type: none"> 1. Liu Yu, <i>Introduction to College Students' Social Practice</i>, Zhejiang University Press, 2017. 2. Chen Shaoping, <i>Social Practice Course for College Students in the New Era</i>, Xiamen University Press, March 2020. 3. Ni Fuquan, <i>Social Practice Course for College Students</i>, China Water Resources and Hydropower Press, June 2016. 		

71 Social Practice II

Social Practice II

Course Name	Social Practice II		
Level	Undergraduate		
Code	13A21005		
Course Module	Interdisciplinary Module		
Semester	The Second Semester		
Responsible Person	Zhang Weiyan		
Lecturer	Li Shilong, Li Shuyao, Liu Xiaoyan		
Language	Chinese		
Course Nature	Compulsory		
Teaching methods	Teacher-oriented methods (lectures and questions); Practical methods (on-the-spot teaching)		
Workload	<p>30 class hours in total (1 class hour =1 hour, 1 ECTS=30 hours)</p> <p>1. Teaching: 4 hours (1 credit *4 hours, completed in 2 weeks, an average of 2 hours per week, including theory teaching, discussion, examination).</p> <p>2. Self-study: 26 hours (1 credit *26 hours, completed in 13 weeks, an average of 2 hours per week, including practice, homework, review for exams).</p>		
ECTS Credits	1 credit point		
Recommended prerequisites	—		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	To make students familiar with the basic links of college students' social practice and improve their social practice ability.	R8

	CLO-2	To make students familiar with the two main research methods of college students' social practice and improve their research ability of social practice.	R9,R12
Content	<p>“Social Practice II” is an important course of ideological and political education for college students, and is an important part of higher education teaching plan. Using the teaching methods of centralized teaching training and on-site practice guidance, teachers lead students to fully understand the requirements of society for outstanding talents on the basis of understanding the national conditions. While students strengthen their political, ideological and theoretical education, emphasis is placed on cultivating and exercising the consciousness and ability of college students to apply and develop knowledge in social practice.</p> <p>Chapter 1 Implementation process of college students' social practice</p> <p>Chapter 2 Methods of college students' social practice</p>		
Study and examination requirements and forms of examination	The final exam of this course is a large assignment, the exam time is 120 minutes, and the final exam score is 100%.		
Media employed	Computer, projector, blackboard, PPT courseware		
Reading List	<ol style="list-style-type: none"> 1. Liu Yu, <i>Introduction to College Students' Social Practice</i>, Zhejiang University Press, 2017. 2. Chen Shaoping, <i>Social Practice Course for College Students in the New Era</i>, Xiamen University Press, March 2020. 3. Ni Fuquan, <i>Social Practice Course for College Students</i>, China Water Resources and Hydropower Press, June 2016. 		

72 Social Practice III

Social Practice III

Course Name	Social Practice III		
Level	Undergraduate		
Code	13A21006		
Course Module	Interdisciplinary Module		
Semester	The Third Semester		
Responsible Person	Zhang Weiyan		
Lecturer	○ Li Shilong ○ Li Shuyao ○ Liu Xiaoyan ★ Lu Huna ★ Peng Wenqian ★ Wan Mingxuan ★ Yang Yuanhang ★ Ye Wei ★ Zhong Liping		
Language	Chinese		
Course Nature	Compulsory		
Teaching methods	Teacher-oriented methods (lectures and questions); Practical methods (on-the-spot teaching)		
Workload	<p>30 class hours in total (1 class hour =1 hour, 1 ECTS=30 hours)</p> <p>1. Teaching: 4 hours (1 credit *4 hours, completed in 2 weeks, an average of 2 hours per week, including theory teaching, discussion, examination).</p> <p>2. Self-study: 26 hours (1 credit *26 hours, completed in 13 weeks, an average of 2 hours per week, including practice, homework, review for exams).</p>		
ECTS Credits	1 credit point		
Recommended prerequisites	—		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	To help college students apply what they have learned, cultivate their independent working ability and	R8,R12

		innovative spirit, and use the scientific theories, professional knowledge and basic skills they have learned to solve practical problems in social practice, so as to further increase their knowledge and ability in practice.	
	CLO-2	To help college students get familiar with the main contents and forms of social practice activities, and master the specific methods of organizing and participating in social practice activities.	R9,R10
Content	<p>“Social Practice III” is an important course of ideological and political education for college students, and is an important part of higher education teaching plan. Using the teaching methods of centralized teaching training and on-site practice guidance, teachers lead students to fully understand the requirements of society for outstanding talents on the basis of understanding the national conditions. While students strengthen their political, ideological and theoretical education, emphasis is placed on cultivating and exercising the consciousness and ability of college students to apply and develop knowledge in social practice.</p> <p>Chapter 1 Social etiquette and protection of rights and interests of college students in social practice</p> <p>Chapter 2 Report writing on college students’ social practice</p>		
Study and examination requirements and forms of examination	The final exam of this course is a large assignment, the exam time is 120 minutes, and the final exam score is 100%.		
Media employed	Computer, projector, blackboard, PPT courseware		
Reading List	<ol style="list-style-type: none"> 1. Liu Yu, <i>Introduction to College Students’ Social Practice</i>, Zhejiang University Press, 2017. 2. Chen Shaoping, <i>Social Practice Course for College Students in the New Era</i>, Xiamen University Press, March 2020. 3. Ni Fuquan, <i>Social Practice Course for College Students</i>, China Water Resources and Hydropower Press, June 2016. 		

73 Handicraft Manufacture

Handicraft Manufacture

Course Name	Handicraft Manufacture		
Level	Undergraduate		
Code	02A21002		
Course Module	Interdisciplinary Module		
Semester	The Third Semester		
Responsible Person	Liu Yongru		
Lecturer	○Li Beibei, Guo Lingling○Liu Rongqi○Yang Luping, Zeng Qingwan○Zhu Aiming, Wei Wenjun		
Language	Chinese		
Course Nature	Optional		
Teaching methods	Practical methods (on-the-spot teaching and exercises)		
Workload	<p>30 class hours in total (1 class hour =1 hour, 1 ECTS=30 hours)</p> <p>1. Teaching: 16 hours (1 credit *16 hours, completed in 8 weeks, an average of 2 hours per week, including teaching and examination).</p> <p>2. Self-study: 14 hours (3 credit *14 hours, completed in 14 weeks, an average of 1 hours per week, including pre-class preview, after-class review, exercises, exercises and homework).</p>		
ECTS Credits	1 credit point		
Recommended prerequisites	No		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	To master the types and applications of paper-cut, master the production steps of paper-cut, and get familiar	R7,R8,R10,R12

		with the production methods of common monochrome paper-cut.	
	CLO-2	To master the form and characteristics of Oriental flower arrangement, Western traditional flower arrangement art, modern flower arrangement design and production.	R7,R8,R10,R12
	CLO-3	To master the formal beauty rules and laws of decorative painting, the conception method of decorative painting and the composition of decorative paintings and create decorative paintings.	R7,R8,R10,R12
	CLO-4	To master the characteristics of traditional clay technology, the value of Chinese characteristics, Chinese features and Chinese style expressed by traditional technology, and be familiar with the method of clay production.	R7,R8,R10,R12
Content	<p>“Handicraft Manufacture” is a compulsory public course for all undergraduate majors in 2021, 2022 and 2023. It aims to explore the cultural connotation, design concept and production method of traditional handicraft, and carry out the study of various manual skills, including paper art, clay, decorative painting and flower arrangement. The course is based on the exploration of traditional handicrafts, and strives to cultivate students’ appreciation ability, aesthetic ability and creativity of traditional Chinese arts and crafts. By combining appreciation theory knowledge with experience practice operation, integrating art appreciation and practice and linking traditional handicraft exploration with handwork, teachers will broaden students’ vision and improve their quality education through the inheritance of traditional handicraft, and finally cultivate students with higher aesthetic quality, stronger hands-on ability, innovative design ability, enhanced cultural self-confidence, higher artistic comprehension ability, better communication ability and other abilities to adapt to the needs of future career development.</p>		

Study and examination requirements and forms of examination	<p>The nature of the course is examination and the form of the exam is large homework.</p> <p>The exam time is 120 minutes. The final exam score counts for 50% of the total grade, and the regular grade (attendance, homework) counts for 50%.</p>
Media employed	Computer, projector, blackboard, PPT courseware
Reading List	<ol style="list-style-type: none"> 1. <i>Folk Paper-cut Art. Flowers Born with Knife and Brush</i>, Luo Chunhai, Liaoning Fine Arts Publishing House, April 2021, 9787531482321 2. <i>Chinese Art of Flower Arrangement</i>, CAI Zhongjuan, Chemical Industry Press, May 2020, 9787122356048 3. <i>Decorative Painting</i>, Li Rubing, China Textile Publishing House, August 1, 2020, 9787518073146 4. <i>Innovative Design and Production of Traditional Handicrafts. Ceramic Art</i>, Zhang Xuan, China Electric Power Press, 2018, 9787519818890

74 Automobile Journey

Automobile Journey

Course Name	Automobile Journey		
Level	Undergraduate		
Code	11AEQ113		
Course Module	Interdisciplinary Module		
Semester	The Fifth Semester		
Responsible Person	Wang Lin		
Lecturer	Wang Lin		
Language	Chinese		
Course Nature	Optional		
Teaching methods	Teacher-oriented methods (lectures, questions and argumentation)		
Workload	<p>60 class hours in total (1 class hour =1 hour, 1 ECTS=30 hours)</p> <p>1. Teaching: 32 hours (2 credit *16 hours, completed in 16 weeks, an average of 2 hours per week, including theoretical teaching, discussion, exercises, etc.).</p> <p>2. Self-study: 28 hours (2 credit *14 hours, completed in 14 weeks, an average of 2 hours per week, including pre-class preview, online learning, after-class review, exercises, homework, exam preparation).</p>		
ECTS Credits	2 credit points		
Recommended prerequisites	No		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	To understand the various stages and applications of automotive styling design, such as program planning, conceptual design, engineering	R6

		<p>design, styling design, and understand the detailed design of each stage and the application of design software.</p> <p>In the design project, the impact of automotive styling design on society, culture, environment and economy is considered, and the awareness of manufacturing engineering ethics is cultivated.</p>	
	CLO-2	<p>To guide students to pay more attention to the requirements and effects of automotive manufacturing practices on materials, such as automotive manufacturing mode and process, stamping process, welding process, painting process, final assembly process, casting process, etc.</p> <p>To lead students to consider the energy consumption of parts and equipment, the disposal of mechanical parts waste in the process design and implementation process, and try to use environmentally friendly materials, energy-saving technology and other measures to promote sustainable development.</p>	R7
	CLO-3	<p>To understand the professional norms and standards of the automobile insurance industry, such as the origin of automobile insurance, the role of automobile insurance, the classification of automobile insurance, the practice of automobile insurance, the practice of automobile insurance claims, and the case analysis of automobile insurance contracts and principles.</p> <p>In the process of internship, strictly abide by professional norms,</p>	R8

		students are guided to establish a good professional image.	
	CLO-4	<p>Through the second-hand car evaluation course, students shall learn to exercise professional skills and comprehensive qualities, such as the overview of second-hand cars, the inspection of second-hand car procedures and licenses, the technical appraisal of second-hand cars — static inspection, the technical appraisal of second-hand cars — dynamic inspection, the technical appraisal of second-hand cars — instrument inspection, from which students can cultivate the ability of independent learning and time management.</p> <p>To improve communication skills with colleagues, superiors and clients on team projects, and be able to express own views and ideas clearly and accurately; To learn to cooperate with team members, complete tasks together, and cultivate team spirit and collaboration ability.</p>	R9
	CLO-5	To master the basic knowledge and skills of vehicle maintenance and repair project management, such as lubrication, cooling, fuel intake, gas distribution, ignition system maintenance; Chassis, battery, transmission and tire maintenance, fault detection and maintenance of engine, transmission, lubrication system, cooling system, steering system, brake system. And through the use of professional tools and methods, students are to develop maintenance process, schedule control, risk management, etc. so as	R10

		<p>to improve the efficiency and accuracy of problem solving.</p> <p>To learn to listen to others, respect different points of view, and promote effective communication in the internship program by participating in project discussions and meetings; To participate in project management activities and understand the whole process and importance of project management.</p>	
	CLO-6	<p>To recognize the rapid development and changing trends in the field of mechanical manufacturing, and establish the concept of lifelong learning.; To master the policy and future development direction of the automobile industry, combine theory with practice, understand the development policy of the automobile industry, automobile energy-saving emission reduction policy, automobile energy-saving technology, automobile new technology and development trend, and try to adopt environmental protection materials, energy-saving technology and other measures to promote sustainable development</p> <p>To actively learn new technologies and new knowledge, constantly update knowledge system, and prepare for the whole process and importance of future career development in the process of internship.</p>	R11

Content	<p><i>Automobile Journey</i> aims to combine theory with practice, talking from the origin of automobile technology and it mainly includes four parts: automobile structure and preparation process; The whole process from concept to prototype, from R&D to mass production; Knowledge of vehicle sales, maintenance, repair, insurance and safe driving; The development trend of the future automobile is forecasted according to the current industrial policy of our country. Through this course, students will gain a thorough understanding of the key stages of this journey from design and manufacturing to recycling. Through learning, students can acquire the preliminary knowledge of the major, cultivate the preliminary ability of independent work and professional skills, so that students can get a comprehensive exercise in ideology and business.</p>
Study and examination requirements and forms of examination	<p>This course is based on the theory teaching of elective courses, and the score is assessed, in which the class attendance score accounts for 20% of the total score, the class performance score of the course learning score is 30% of the total score, and the final exam score is 50% of the total score.</p>
Media employed	<p>Computer, websites</p>
Reading List	<p>No</p>

75 Organizational Behavior

Organizational behavior

Course Name	Organizational behavior		
Course level	Undergraduate level		
curriculum code	11AEQ169		
Owning module	Interdisciplinary module		
Term	The fifth semester		
Course Director	Wang Shuhong		
Lecturer	Wang Shuhong		
Language	Chinese		
Characteristics of the Course	Elective courses		
Teaching Methods, Teaching Time	Teacher-centered approach (teaching, questioning, argumentation)		
Workload	<p>Total class hours 60 hours (1 class hour =1 hour, 1ECTS=30 hours)</p> <p>1. Teaching: 32 credit hours (2 credits *16 credit hours, completed in 16 weeks, an average of 2 credit hours per week, including theory teaching, discussion, examination).</p> <p>2. Self-study: 28 credit hours (2 credits *14 credit hours, completed in 14 weeks, averaging 2 credit hours per week, including revision)</p>		
Credit	2 credits		
Prerequisite Course	none		
Learning Outcomes and Corresponding Training Objectives	Curriculum learning outcomes	Description	Supported learning objectives
	Learning outcomes-1	How to know others accurately - Social cognition and Attribution	R7,R8,R9

	Learning Outcomes -2	Master the effective motivation of staff, effective change of staff attitude	R8,R9,R12
	Learning Outcomes -3	Learn how to manage group behavior and build high-performing teams. Grasp the psychological laws behind human behavior in an organization or management situation.	R7,R9,R12
Content	<p>Organizational Behavior is a cross-applied discipline, which comprehensively uses the knowledge of psychology, sociology, anthropology, economics, political science and other disciplines to study the laws of human psychology and behavior in organizational situations. The purpose of learning organizational behavior is to better explain, predict, control and guide the behavior of people in organizational context on the basis of mastering the psychological and behavioral laws of people in organizational context, so as to effectively achieve the expected goals of the organization. Through the study of this course, students can understand and master the basic theories of organizational behavior from the three levels of individual, group and organization, and master the psychological laws behind human behavior in organizations or management situations.</p> <p>Chapter 1 Overview of organizational behavior</p> <p>Chapter 2 How to Know People and make Good Use of them - Individual Psychology and Behavior</p> <p>Chapter 3 How to Know Others Accurately - Social Cognition and Attribution</p> <p>Chapter 4 How to Motivate Employees Effectively</p> <p>Chapter 5 How to Effectively Change Employee attitudes</p> <p>Chapter 6 How to Manage Group Behavior</p> <p>Chapter 7 How to Build a High-performance Team</p> <p>Chapter 8 How to Improve the Effectiveness of Leadership</p> <p>Chapter 9 How to Design Organizational Structure</p>		
Study and Examination Requirements and Examination Format	<p>The final exam of the course is a large assignment, the exam time is 100 minutes, the final exam score accounts for 70% of the total grade, and the class work, extracurricular work, questions, discussions, etc., accounts for 30%.</p>		

The media Used	Computer, projector, blackboard, PPT courseware
Reading List	<ol style="list-style-type: none">1. Wang Yongquan, Organizational Behavior, Hunan University Press, November 2015.2. Li Wei, Organizational Behavior, Wuhan University Press, August 2012.

76 Artificial Intelligence, Language and Ethics

Artificial intelligence, language and ethics

Course Name	Artificial intelligence, language and ethics		
Course level	Undergraduate level		
curriculum code	11AEQ065		
Owning module	Interdisciplinary module		
Term	The 7th semester		
Course Director	Xu Yingjin		
Lecturer	Xu Yingjin		
Language	Chinese		
Characteristics of the Course	Elective courses		
Teaching Methods, Tteaching Time	Teacher-centered approach (teaching, questioning, argumentation)		
Workload	<p>Total class hours 90 hours (1 class hour =1 hour, 1ECTS=30 hours)</p> <p>1. Teaching: 48 credit hours (3 credits *16 credit hours, completed in 16 weeks, with an average of 3 credit hours per week, including theory teaching, discussion, and examination).</p> <p>2. Self-study: 42 class hours (3 credits *14 class hours, completed in 14 weeks, with an average of 3 class hours per week, including exercises, homework and discussion).</p>		
Credit	3 credits		
Prerequisite Course	none		
Learning Outcomes and Corresponding Training Objectives	Curriculum learning	Description	Supported learning objectives
	Learning outcomes-1	Through learning, students are able to fully understand the basic	R6,R7

		concepts, principles and applications of artificial intelligence in language processing, such as natural language processing, speech recognition, machine translation, etc.	
	Learning outcomes-2	Students will recognize the ethical issues raised by the development of artificial intelligence technology, such as privacy protection, algorithmic fairness, liability and rights protection, and learn methods and techniques to address these challenges.	R8,R12
	Learning outcomes-3	Students will apply their knowledge to practical problem solving through practical projects in the course, such as designing and implementing a simple natural language processing system or conducting case studies on AI ethics.	R10,R11
Content	<p>What is weak artificial intelligence, strong artificial intelligence, general Artificial Intelligence and special Artificial intelligence? Why does the "Romance of The Three Kingdoms" in the history of artificial intelligence need a philosophical perspective? Is "big data" really that smart? How do you teach a computer to speak? Can computers understand Chinese? Can a computer understand the difference between "a handsome man" and "a handsome man"? Can AI understand metaphors? How to design a Confucian robot? All this will be answered in the course "Artificial Intelligence: Language and Ethics".</p> <p>Chapter 1 The "Romance of The Three Kingdoms" in the History of Artificial Intelligence</p> <p>Chapter 2 "Super Artificial Intelligence" Is Not as simple as it Seems!</p> <p>Chapter 3 Is "Big Data Technology" Really Smart</p> <p>Chapter 4 Artificial Intelligence and Natural language Processing</p> <p>Chapter 5 Can Computers Understand Chinese? -- Chinese character house demonstration</p> <p>Chapter 6 looks at machine translation from the perspective of cognitive linguistics</p>		

	<p>Chapter 7 Can a Computer Understand the difference between "a handsome Man" and "a handsome Man"?</p> <p>Chapter 8 What Is English? Understanding Japanese is the challenge for computers</p> <p>Chapter 9 From Speaking to Handling human - Conscious robot Design - on Having Ethics</p> <p>Chapter 10 How to Build a Confucian Robot</p> <p>Chapter 11 Reading</p> <p>Chapter 12 Questionnaire survey</p>
Study and Examination Requirements and Examination Format	The final exam of this course is open book, the exam time is 120 minutes, the final exam score accounts for 60% of the total score, and the usual score accounts for 40% of the total score (30% attendance, 30% homework, 20% discussion, 20% group assessment)
The media Used	Computer, projector, loudspeaker, whiteboard
Reading List	<ol style="list-style-type: none"> 1. "Artificial Intelligence-The Disruptive Technology That will Change the Future", Zhou Zhimin, Posts and Telecommunications Press, August 2017, ISBN: 978-7-115-4670-7 2. Introduction to Artificial Intelligence, Wang Wanliang, Higher Education Press, 2017, 4th edition, 9787040479843 3. Principles and Applications of Artificial Intelligence, Yu Yumei et al., Shanghai Jiao Tong University Press, 2018, 1st edition, 978-7-33-18264-7

77 Innovation China

Innovation China

Course Name	Innovation China		
Course level	Undergraduate level		
curriculum code	11AEQ064		
Owning module	Interdisciplinary module		
Term	The 7th semester		
Course Director	Qiu Xiulan		
Lecturer	Qiu Xiulan		
Language	Chinese		
Characteristics of the Course	Elective courses		
Teaching Methods, Teaching Time	Teacher-centered approach (teaching, questioning, argumentation)		
Workload	<p>Total class hours: 50 (1 class hour =1 hour, 1ECTS=30 hours)</p> <p>1. Teaching: 20 credit hours (3 credits *6.7 credit hours, completed in 6 weeks, with an average of 2 credit hours per week, including theory teaching, discussion, and examination).</p> <p>2. Self-study: 70 class hours (3 credits *23.3 class hours, completed in 6 weeks, an average of 7 class hours per week, including exercises, homework, review for exams).</p>		
Credit	3credits		
Prerequisite Course	Introduction to the basic principles of Marxism		
Learning Outcomes and Corresponding	Curriculum learning outcomes	Description	Supported learning objectives

Training Objectives	Learning outcomes-1	<p>1. Students need to understand why innovation should be put in the first place in the 13th Five-Year Plan; Whether China can bring new movement to the development of the world economy and China's innovation road.</p> <p>2. Understand why human-sized robots are the most difficult to build; Understand the development of robots and their application in modern society; Understand the development of unmanned boat and its application in modern society.</p>	R7
	Learning outcomes-2	<p>1. Understand the concept of Innovative China. Master the main body of innovation; Think about how to innovate and start a business.</p> <p>2. Master the difference between Internet power and Internet power; How to combine the big data era with multi-disciplines.</p>	R11
	Learning outcomes-3	<p>1. Understand what it takes to innovate.</p> <p>2. Master how to deal with management and competition.</p> <p>3. Think about how to improve your creativity.</p>	R12

Content	<p>"Innovation in China" is an elective course of electronic information engineering. In the course of teaching, he integrated hot topics in society and introduced China's cutting-edge innovation and development from the aspects of Internet, culture, intelligent technology and materials.</p> <p>Chapter 1 Why is "innovation" a top priority for a big country</p> <p>1.1 The relationship between China and the world on innovation</p> <p>1.2 China's innovation development trajectory</p> <p>1.3 The important role of innovation in China's development</p> <p>1.4 Innovation is the foundation of China's strength</p> <p>Chapter 2 Who makes what China makes</p> <p>2.1 Innovation comes from endless dreams</p> <p>2.2 Past and present lives of robots</p> <p>2.3 Innovative application of robots</p> <p>2.4 Research and development and application of surface unmanned boat</p> <p>Chapter 3 Mass innovation, who is the main body</p> <p>3.1 Talent training mode of innovation and entrepreneurship</p> <p>3.2 Innovative ideas in the 13th Five-Year Plan</p> <p>3.3 Current status of innovation and development in Shanghai</p> <p>3.4 Shanghai will create a science and innovation center with global influence</p> <p>3.5 Cultivation of innovative subjects</p> <p>Chapter 4 Is BAT an Internet power</p> <p>4.1 What is an Internet power</p> <p>4.2 Big Data and population mobility</p> <p>4.3 Origin and development of big data</p> <p>Chapter 5 Is innovation just a brainwave</p> <p>5.1 Organizational and institutional conditions of scientific and technological innovation</p> <p>5.2 How do I redefine management</p> <p>5.3 Competition theme in the era of mobile Internet</p> <p>Chapter 6 Where does innovation come from</p>
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	<p>6.1 What is innovation</p> <p>6.2 Concepts of discovery, invention and innovation</p> <p>6.3 The importance of innovative thinking</p> <p>6.4 Make innovation a habit</p>
Study and Examination Requirements and Examination Format	The final exam of the course is a large assignment, the exam time is 120 minutes, the final exam score accounts for 70% of the total grade, and the class work, extracurricular work, questions, discussions, etc., accounts for 30%.
The media Used	Computer, projector, blackboard, PPT courseware, online website
Reading List	<p>2. Mobile Internet, Liang Xiaotao, Wuhan University Press, 2013.3, ISBN:9787307103740</p> <p>3. Innovation and Entrepreneurship Education, Chen Jingliang, Fudan University Press,2012, ISBN:9787309084238.</p> <p>4. Innovative design leads manufacturing in China. People's Publishing House,2018.2, ISBN:9787010187501.</p> <p>5. China's Innovative Power, Rebecca Fanning, CITIC Press, 2023.6, ISBN:9787521752205.</p> <p>6. Technological Innovation, Science and Technology Press of China, ISBN:9787504698674.</p>

78 Innovation, Invention and Patent Practice

Innovation, invention and patent practice

Course Name	Innovation, invention and patent practice		
Course level	Undergraduate level		
curriculum code	11AEQ033		
Owning module	Interdisciplinary module		
Term	The 7th semester		
Course Director	Mao Guozhu		
Lecturer	Mao Guozhu		
Language	Chinese		
Characteristics of the Course	Elective courses		
Teaching Methods, Teaching Time	Teacher-centered approach (teaching, questioning, argumentation)		
Workload	<p>Total class hours 90 hours (1 class hour =1 hour, 1ECTS=30 hours)</p> <p>1. Teaching: 32 credit hours (3 credits *11 credit hours, completed in 11 weeks, an average of 1 credit hours per week, including theory teaching, discussion, examination).</p> <p>2. Self-study: 58 hours (3 credits *20 hours, completed in 10 weeks, an average of 2 hours per week, including online courses (study pass), exercises, homework, review for exams).</p>		
Credit	3credits		
Prerequisite Course	none		
Learning Outcomes and Corresponding Training Objectives	Curriculum learning outcomes	Description	Supported learning objectives
	Learning outcomes-1	Master the history of the patent system, the basic characteristics of patents, patent application	R5

		procedures; Understand the internationalization of patent applications. Understand the difficulties of college students' entrepreneurship and master the questionnaire survey method.	
	Learning outcomes-2	Innovation is a conceptualization process characterized by new thinking, new inventions, and new descriptions. Innovation is the soul of a nation's progress, the inexhaustible driving force for a country's prosperity, and the source of a political party's eternal vitality.	R6,R7
Content	Learning outcomes-3	Learn about the four great ancient inventions and understand the meaning of inventions.	R5
	Learning outcomes-4	Understand the meaning of patent, distinguish the types of patent, the characteristics of patent, master the application principles of patent, such as the principle of legal form, the principle of singleness, the principle of first application.	R8
Content	<p>"Innovation, Invention and Patent Practice" is an elective course of electronic information engineering. Innovation is the soul of a nation's progress, the inexhaustible driving force of a country's prosperity, and the source of a political party's eternal vitality. Innovation covers a wide range of fields, including political, military, economic, social, cultural, scientific and technological innovation. Invention is the process and result of applying the laws of nature to solve the unique problems in the field of technology and putting forward innovative solutions and measures. Literally, "patent" refers to exclusive interests and rights.</p>		

	<p>Chapter 1 History of the patent system</p> <p>Chapter 2 Basic characteristics of patents</p> <p>Chapter 3 Object of patent protection</p> <p>Chapter 4 Procedure of patent application</p> <p>Chapter 5 Internationalization of patent applications</p> <p>Chapter 6 Disclosure of patent documents</p> <p>Chapter 7 Introduction to innovation, invention and patent practice</p> <p>Chapter 8 TRIZ</p> <p>Chapter 9 Difficulties for college students to start businesses</p> <p>Chapter 10 Entrepreneurship and innovation</p> <p>Chapter 11 College students and entrepreneurship</p>
Study and Examination Requirements and Examination Format	The final exam of the course is a closed book, the exam time is 120 minutes, the final exam score accounts for 70% of the total grade, class work, homework, questions, discussions, etc. 30%.
The media Used	Computer, projector, blackboard, PPT courseware, online website
Reading List	<p>1. Zhao Peixing, Innovation, Heilongjiang People's Publishing House 2006.09.</p> <p>2. Zhao Daqing and Qiang Yanping, Source of Independent Innovation of Original Technological Invention Methods, Huaxia Publishing House, 2006.05.</p> <p>3. Kang Tianxiong, Research on Public Policy of Patent Law, Huazhong University of Science and Technology Press, 2019.03.</p> <p>Zhang Ying, Ed. Intellectual Property Protection and Application of Patent System, Hebei Science and Technology Press, 2014.</p>

79 Academic Norms and Ethics

Academic Norms and Ethics

Course Name	Academic norms and ethics		
Course level	Undergraduate level		
curriculum code	11AEQ612		
Owning module	Interdisciplinary module		
Term	The 7th semester		
Course Director	Xia Houchen		
Lecturer	Xia Houchen		
Language	Chinese		
Characteristics of the Course	Elective courses		
Teaching Methods, Teaching Time	Teacher-centered approach (teaching, questioning, argumentation)		
Workload	<p>Total class hours 90 hours (1 class hour =1 hour, 1ETCS=30 hours)</p> <p>1. Teaching: 48 credit hours (3 credits *16 credit hours, completed in 16 weeks, with an average of 3 credit hours per week, including theory teaching, class discussion, exercises, online mixed teaching, etc.).</p> <p>2. Self-study: 42 hours (3 credits *12 hours, completed in 20 weeks, an average of 2.1 hours per week, including pre-class preview, online learning, after-class review, exercises, questionnaire survey, reading, homework, test preparation).</p>		
Credit	3credits		
Prerequisite Course	College Chinese		
Learning Outcomes and Corresponding Training Objectives	Curriculum learning outcomes	Description	Supported learning objectives
	Learning outcomes-1	Cultivate students' autonomous learning, understand the basic	R10

		requirements of academic norms and ethics, and provide methodical guidance for students' follow-up study and research, so as to avoid academic misconduct, improve academic quality and create a good style of study.	
Content	<p>The content of Academic Norms and Academic Ethics is universally applicable. It is a course that cultivates the awareness of the bottom line of scientific research, teaches the general academic norms, and focuses on avoiding academic risks.</p> <p>Chapter 1 Introduction to academic norms and academic ethics</p> <p>Chapter 2 Academic norms and their blind spots</p> <p>Chapter 3 Academic paper process and normative expression</p> <p>Chapter 4 A Guide to academic norms</p> <p>Chapter 5 Dissertation writing</p> <p>Chapter 6 Common academic misconduct and its governance</p> <p>Chapter 7 A case study of academic norms and ethics</p>		
Study and Examination Requirements and Examination Format	<p>The final exam of the course is a large assignment and lasts 120 minutes. The final grade of the course consists of a final exam and a process assessment. Among them, the final exam score accounts for 70% of the total assessment, and the usual performance in the process assessment (including attendance, discussion, homework, etc.) accounts for 30%. Students must obtain a final grade of 60 or more to pass.</p>		
The media Used	Computer, projector, blackboard, PPT courseware, online website		
Reading List	<p>Academic Norms and Research Ethics, Shanghai Jiao Tong University Press, 2023, 1st edition, ISBN No. 9787313275042</p> <p>Reference material: Bachelor's Integrity and Academic Norms, Tianjin University Press, 2011. First edition, ISBN: 9787561828960</p> <p>Academic Norms and Academic Ethics</p>		

80 Modern Physical Geography

Modern physical geography

Course Name	modern physical geography		
Course level	Undergraduate level		
curriculum code	11AEQ804		
Owning module	Interdisciplinary module		
Term	The 7th semester		
Course Director	Wang Jian		
Lecturer	Wang Jian		
Language	Chinese		
Characteristics of the Course	Elective courses		
Teaching Methods, Teaching Time	Teacher-centered approach (teaching, questioning, argumentation)		
Workload	<p>Total class hours 90 hours (1 class hour =1 hour, 1ECTS=30 hours)</p> <p>1. Teaching: 26 credit hours (3 credits *9 credit hours, completed in 9 weeks, with an average of 3 credit hours per week, including theory teaching, discussion, examination, etc.).</p> <p>2. Self-study: 64 hours (3 credits *21 hours, completed in 21 weeks, an average of 3 hours per week, including exercises, homework, review for exams, etc.).</p>		
Credit	3 credits		
Prerequisite Course			
Learning Outcomes and Corresponding	Curriculum learning outcomes	description	Supported learning objectives

Training Objectives	<p>learning outcomes-1</p>	<p>1.. Understand the basic concepts, objects and methods of physical geography.</p> <p>(2) To master the formation mechanism and evolution law of various natural geographical phenomena on the Earth's surface. Be able to analyze the influence of natural geographical environment on human activities and the reaction of human activities on natural geographical environment.</p>	R7
	<p>learning outcomes-2</p>	<p>By explaining the basic knowledge of modern physical geography, students' natural science knowledge and scientific literacy are enhanced.</p>	R12
Content	<p>Modern Physical Geography This course covers an overview of modern physical geography, geography in the twenty-first century, physical geography and the Earth's surface system, physical geography and the human environment, objects of study in physical geography, the lithosphere, atmosphere, hydrosphere, biosphere and their interactions, the Earth and the Earth's surface environment, the Earth's surface environment and the Earth's surface system. By explaining the basic knowledge of modern physical geography, students' natural science knowledge and scientific literacy can be improved.</p> <p>Chapter 1 Geography in the twenty-first Century</p> <p>Chapter 2 Introduction to modern physical geography</p> <p>Chapter 3 Physical Geography and Earth surface system</p> <p>Chapter 4 The Lithosphere</p> <p>Chapter 5 The Atmosphere</p> <p>Chapter 6 The Hydrosphere</p> <p>Chapter 7 The Biosphere</p> <p>Chapter 8 Interaction between layers</p> <p>Chapter 9 Interaction between hydrosphere and lithosphere</p> <p>Chapter 10 The Interaction between the hydrosphere and the atmosphere</p>		

	<p>Chapter 11 Interaction of hydrosphere, atmosphere and lithosphere</p> <p>Chapter 12 Interaction between biosphere, hydrosphere, atmosphere and lithosphere</p> <p>Chapter 13 Interaction of biosphere, hydrosphere, atmosphere, lithosphere and Earth surface system</p> <p>Chapter 14 The application of physical geography -- methods, principles and examples</p> <p>Chapter 15 Prediction planning and management of surface environment</p>
<p>Study and Examination Requirements and Examination Format</p>	<p>The final exam of the course is a large assignment, the exam time is 60 minutes, the final exam score counts for 70% of the total grade, class attendance, homework, questions, class discussion, etc., counts for 30%.</p>
<p>The media Used</p>	<p>Erya teaching platform</p>
<p>Reading List</p>	<p>7. Wang Jian, Modern Physical Geography, Higher Education Press, 2004.7.</p> <p>8. Wu Dian-Ting, Cong Dong-lai, Du Xia, Principles of Regional Geography, Southeast University Press, 2016.7.</p> <p>Bai Guangrun, Introduction to Geography, Higher Education Press, 1993.11.</p>

81 SYB+GYB Training

SYB+GYB Training

Curriculum name	SYB+GYB Training		
Curriculum level	Undergraduate		
Curriculum code	11AEQ609		
Module	Interdisciplinary module		
Semester	3rd semester		
Contact person	Xiaoming LI		
Lecturer	Xiaoming LI		
Language	Chinese		
Relation to curriculum	Elective		
Teaching methodology	Teacher-centered methodology(lectures, questions, and argumentation), 60		
Teaching hours	teaching hours.		
Workload	<p>60 class hours in total (1class hour=1 hour, 1 ECTS=30 hours)</p> <p>1.Teaching: 32 class hours (2 credit points*16 class hours, average 2 class hours per week within 16 weeks, including theories, discussion, and examination).</p> <p>2.Private study: 28 class hours (2 credit points*14 class hours, average 2 class hours per week within 14 weeks, including online courses (Xuexitong), exercises, homework, and examination review).</p>		
Credit points	2 credit points		
Recommended prerequisites	——		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	Cultivate high-quality talents with entrepreneurial spirit, innovation consciousness and entrepreneurial	R1

		ability who have the theoretical foundation of entrepreneurship, master the knowledge and basic skills of entrepreneurship, and adapt to the needs of career.	
	CLO-2	Be familiar with the process of establishing a business and the issues that should be paid attention to, and understand the key factors of entrepreneurial success; master the methods of identifying business opportunities, correctly understanding selves, and the key points of writing business plans.	R7,R8,R9
	CLO-3	Cultivate students' innovative consciousness, entrepreneurial spirit and entrepreneurial thinking mode with overall concepts, improve their service awareness, and develop their good professional quality with optimistic and enterprising spirit. Cultivate students' ability to identify needs and business opportunities; to write standard business plans; to avoid risks and manage crises, and to communicate with others	R10,R11,R12
Content	<p><i>SYB+GYB Training</i> is a public elective course, which mainly introduces how college students should start a business and the specific methods of starting a business, and uses some cases to illustrate how to start a business. At the same time, it compares the situation of entrepreneurship at home and abroad, which has good roles in reference and guidance for college students to start a business.</p> <p>Chapter I Entrepreneurship, Spirit, and Development</p> <p>Chapter II° Entrepreneurs and Teams</p> <p>Chapter III° Entrepreneurial Opportunities and Risks</p>		

	<p>Chapter IV° Entrepreneurial Resources</p> <p>Chapter V° Entrepreneurial Plans</p> <p>Chapter VI° Start-ups Operation</p> <p>Chapter VII° Initial Entrepreneurial Marketing and Management</p> <p>Chapter VIII Initial Entrepreneurial Financial Management</p> <p>Chapter IX Initial Entrepreneurial Customers Management</p> <p>Chapter X° Embrace Entrepreneurial New Era</p> <p>Chapter XI° Interview Entrepreneurs around Us</p> <p>Chapter XII Successful Entrepreneurs' secrets</p> <p>Chapter XIII Business Negotiation</p> <p>Chapter XIV A Good Ten-page Business Plan</p> <p>Chapter XV Nine-step Business Mode Design Procedure</p> <p>Chapter XVI Entrepreneurial Practice Simulation Training</p> <p>Chapter XVII Summer Entrepreneurial Practice Programs</p>
Study and examination requirements and forms of examination	The final exam of the course is closed-book within 120 minutes, whose final exam score accounts for 70% of the total grade, and class work, homework, questions, and discussions, etc. 30%.
Media employed	Computer, Projector, Blackboard, PPT, Online websites
References	<ol style="list-style-type: none"> 1. Tao WANG, Guangyu YAN, Junqi LI. 2021. <i>Career Development and Employment Guidance</i>. Beijing Normal University Publishing Group. 2. Changqing WANG. 2017. <i>College Students Employment and Entrepreneurship Guidance</i>. Nanjing University Press. 3. Nan HU, Yong GUO, Wei DING. 2017. <i>College Students Innovation and Entrepreneurship Guidance</i>. Posts & Telecom Press.

Module Seven Engineering Practice Module

82 Electronic Technique Skills Training

Electronic Technique Skills Training

Curriculum name	Electronic Technique Skills Training		
Curriculum level	Undergraduate		
Curriculum code	05A21078		
Module	Engineering Practice Module		
Semester	1st semester		
Contact person	Wen QIAN		
Lecturer	Wen QIAN Meng WU, Jingwei WANG		
Language	Chinese		
Relation to curriculum	Compulsory		
Teaching methodology	Teacher-centered methodology(lecture), practical methodology (laboratory study,		
Teaching hours	exercises), mutual methodology(group discussion)		
Workload	<p>90 teaching hours in total (1class hour=1 hour, 1ECTS=30 hours)</p> <p>1. Teaching: 48 class hours (3 credit points*16 class hours, average 3 class hours per week within 16 weeks, including theories, discussion, and examination).</p> <p>2. Private study: 42 class hours (3 credit points*14 class hours, average 3 class hours per week within 14 weeks, including online courses (Xuexitong), open laboratory, and results show).</p>		
Credit points	3 credit points		
Recommended prerequisites	——		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning

			Objective (ILOs)
	CLO-1	<p>Through the training of electronic technique skills, students should be able to deeply understand the basic theory and practical operation of electronic techniques.</p> <p>Master the identification methods of various components, such as the recognition of color ring resistance, the classification of diode and triode, etc.</p> <p>Familiar with electronic circuit experiment and use of manufacturing tools, such as electronic breadboard, and PCB board, etc.</p> <p>Understand the production process and technique requirements of electronic products, and have a comprehensive understanding of the manufacturing process of electronic products.</p>	R1
	CLO-2	<p>During the training process, students need to analyze the circuit principle, understand the layout and connection of the circuit diagram, so as to identify possible problems.</p> <p>In the process of circuit construction and welding, students can learn how to detect fault points and solve problems through step-by-step troubleshooting.</p> <p>Through practical operation, students can improve the ability to</p>	R2

		analyze and solve electronic equipment and circuit faults.	
	CLO-3	<p>Students should be able to design and make simple electronic circuits according to the needs, such as touch alarms, bedside time-lapse lamps, etc.</p> <p>In the innovation task, students need to weld specific shapes with wires (such as a football) and try to design their own works, which develops their abilities to design and innovate.</p> <p>Through hands-on work, students can learn how to apply theoretical knowledge to real projects and find solutions that meet the needs.</p>	R3
	CLO-4	<p>In the course of practical training, students can learn professional norms and standards of the electronics industry, such as the standardized identification of components and the standardized design of circuits.</p> <p>In practice, students can develop a rigorous work attitude and a style of excellence, which is of great significance to their future careers.</p> <p>Students can also learn how to write experimental reports and technical documents, improving their professional quality and comprehensive ability.</p>	R8

	CLO-5	<p>Through practical training, students' hands-on skills should be significantly improved, and they should be able to operate electronic devices and tools more proficiently.</p> <p>In the process of practical training, students can learn to cooperate and communicate with others , and cultivate the spirit of teamwork.</p> <p>In the face of problems and challenges, students can stay calm and actively find solutions, which improves their psychological quality and problem-solving ability.</p>	R9
Content	<p><i>Electronic Technique Skills Training</i> is a compulsory course of electronic professional technical skill courses, which plays a leading role in professional education in the process of professional personnel training. It mainly teaches the identification of electronic components, the use of multimeters, and the assembly and debugging of electronic products. Through the study of the course, students can have a better understanding of the electronics industry, improve their basic knowledge and skills of experimental operation, and lay a good foundation for the practical training and experimental operation of subsequent courses such as circuit analysis, analog electronics technology, and digital electronic technology.</p> <p>Section 1 Adjustable DC Regulated Power Supply Production</p> <p>Section 2 Bell Time-lapse Device Production</p> <p>Section 3 Acousto-optic Lighting Electronic Switch Production</p> <p>Section 4 Eight-way Answer Production</p>		
Study and examination requirements and forms	<p>The final exam of this course is practical operation within 100 minutes. The final exam score accounts for 50% of the total grade, and the class work, extracurricular</p>		

of examination	work, questions, and discussions, etc., 50%.
Media employed	Computer, Projector, Blackboard, PPT, experimental facilities, experimental tools, and online websites
Reading List	<ol style="list-style-type: none"> 1. Gangyuan WANG. 2014. <i>Elementary Electronic Design Production</i>. Jiangxi Science & Technology Publishing House. 2. Yongzhe XIN. 2013. <i>Elementary Electricians and Electronic Technology</i>. Beijing Institute of Technology Press. 3. Yudong LI. <i>Electricians and Electronic Practice Serial Courses-Circuit Tests Technology</i>. China Coal Industry Publishing House.

83 Comprehensive Programs Practice

Comprehensive Programs Practice

Curriculum name	Comprehensive Programs Practice		
Curriculum level	Undergraduate		
Curriculum code	05A21084		
Module	Engineering Practice Module		
Semester	7th semester		
Contact person	Yanqi LIU		
Lecturer	Yanqi LIU, Jun ZENG		
Language	Chinese		
Relation to curriculum	Compulsory		
Teaching methodology, Teaching hours	Teacher-centered methodology (lectures, questions, and argumentation), practical methodology (laboratory study, exercises)		
Workload	<p>180 class hours in total (1 class hour=1 hour, 1 ECTS=30 hours)</p> <p>1. Teaching: 48 class hours (6 credit points*8 class hours, average 3 class hours per week within 16 weeks, including theories, experiments, discussion, and examination).</p> <p>2. Private study: 132 class hours (6 credit points*22 class hours, average 6.6 class hours per week within 20 weeks, including exercises, homework, and examination review).</p>		
Credit points	6 credit points		
Recommended prerequisites	SCM principle and application, Embedded system principle and application, Printed circuit board design and production		
Learning outcomes and their corresponding	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective

ILOs			(ILOs)
	CLO-1	1. Course design task analysis and reference retrieval. 2. Argument and statement of course design plans.	R1,R2
	CLO-2	1. According to systematic design schemes, design hardware circuits. 2. Be able to use software platform systematically developed and develop corresponding systematic software according to design schemes and hardware circuits structure.	R3
	CLO-3	1. Test already-made hardware circuits and eliminate faults. 2. Be able to download the target program to the target board; Be able to test online debugging during the program development.	R4,R5
	CLO-4	Write design reports	R10
Content	<p><i>Comprehensive Programs Practice</i> mainly teaches the design and development process of electronic products, and the writing methods of professional design reports. Through the study of this course, students should be able to design and develop simple electronic products, and write products design reports, which lays a solid foundation for subsequent graduation design (thesis) writing and also for design, research, and development of electronic products in the future.</p> <p>I Tasks Analysis and Information Retrieval II Arguments for Design Plans III Design Schemes Reply IV Design of hardware circuits V Production and test of hardware circuits VI Design of Software VII Systematic tests</p>		

	VIII Design Reports Writing
Study and examination requirements and forms of examination	The final exam of this course is practical operation within 100 minutes. The final exam score accounts for 50% of the total grade, class work, extracurricular homework, questions, discussions, and lab reports, etc. 50%.
Media employed	Computer, Projector, Whiteboard, PPT
Reading List	<ol style="list-style-type: none"> 1. Ying TANG. 2020. <i>Singlechip Integrated Design Examples and Experiments</i>. Publishing House of Electronics Industry. 9787121251023. 2. Junfeng WANG. 2014. <i>Electronic Products Development Design and Production. 1st Edition</i>. Posts & Telecom Press. 9787115128508. 3. Gangyuan WANG. 2014. <i>Elementary Electronic Design Production. 1st Edition</i>. Jiangxi Science & Technology Publishing House. 9787539044736. 4. Wenjie DU et al. 2015. <i>Colleges and Universities Graduation Design (Thesis) Guidance Course</i>. China Water&Power Press. 9787517031185.

84 Programme Skill Certificates

Programme Skill Certificates

Curriculum name	Programme Skill Certificates		
Curriculum level	Undergraduate		
Curriculum code	09A21042		
Module	Engineering Practice Module		
Semester	8th semester		
Contact person	Shuling CAO		
Lecturer	/		
Language	Chinese		
Relation to curriculum	Compulsory		
Teaching methodology, Teaching hours	Practical methodology (exercises, etc.)		
Workload	60 class hours in total (1 class hour=1 hour, 1 ECTS=30 hours) Private study: 60 class hours (2 credit points*30 class hours, average 5 class hours per week within 12 weeks, including literature reading, access to information, paper writing and modification, production and debugging of graduation design material).		
Credit points	2 credit points		
Recommended prerequisites	_____		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)
	CLO-1	Through study and practice,	R1

		students should master theories, techniques, and skills required for professional skill certificates.	
	CLO-2	Through study, enhance students' awareness of abiding by professional ethics and norms.	R8
	CLO-3	Have the spirit, consciousness and ability of innovation and entrepreneurship, and have the ability to continuously acquire knowledge, develop own potential, consciously and actively learn, and adapt to post changes.	R12
Content	<p>This course has a certain position in the engineering knowledge system, and can effectively and intuitively reflect students' practical abilities and relevant technical skill level. <i>Programme Skill Certificates</i> is a comprehensive quality and ability course in the undergraduate talents training programs, which plays an important role in directly reflecting students' comprehensive quality and ability level to a certain extent, and promoting the expansion of students' comprehensive quality and practical technical skills. The course mainly requires students to master at least one professional skill certificate, and to obtain professional skill certificates or vocational skill level certificates recognized in our country, including but not limited to CET-4 and CET-6 Certificates, NCRE Certificates, Certificate of Putonghua Proficiency Test, Teacher Qualification Certificate, driving license, Unmanned aerial vehicle license, various professional vocational skill level certificates, 1+X professional vocational skill level certificates, etc. Through the study and practice of this course, students can expand their technical skills in terms of comprehensive quality, cultivate rigorous work style and serious and responsible work attitude, exercise their ability to work independently, and strengthen their comprehensive quality.</p>		

Study and examination requirements and forms of examination	The examination is a big project, providing originals of relevant professional skill certificates and submitting a copy of the certificate as storage materials.
Media employed	Computers
Reading List	/

85 Graduation Internship

Graduation Internship

Curriculum name	Graduation Internship		
Curriculum level	Undergraduate		
Curriculum code	05A21085		
Module	Engineering Practice Module		
Semester	7th semester		
Contact person	Wen QIAN		
Lecturer	Wen QIAN, Dandan ZHANG, Xiulan QIU, Liwen ZHENG		
Language	Chinese		
Relation to curriculum	Compulsory		
Teaching methodology, Teaching hours	Practical methodology (internship), 0 teaching hour		
Workload	300 class hours in total (1 class hour=1 hour, 1 ECTS=30 hours) Internship: 300 class hours (10 credit points*30 class hours, average 5 class hours every 5 days, 5 class hours per day within 12 weeks, including internship, weekly internship records and reports).		
Credit points	10 credit points		
Recommended prerequisites	Thesis (Design), Programme Skill Certificate, Comprehensive Program Practice, Embedded System Principle and Application, SCM Principle and Application, C Language Programming, Electronic Technology Skills Training, Introduction to Artificial Intelligence Technology, Analog Electronic Technology, Digital Electronic Technology		
Learning outcomes and their	Course Learning Outcome (CLO)	Description	Supported Intended Learning

corresponding ILOs			Objective (ILOs)
	CLO-1	<p>During the internship, students can apply the knowledge of electronic information engineering to practical projects, such as circuit design, communication protocol implementation, and embedded system development, etc.</p> <p>Through practice, students can deepen the understanding of core courses such as signal processing, communication system, digital circuit, and embedded programming, etc.</p>	R1
	CLO-2	<p>During the internship, students can learn to identify and analyze engineering problems, including hardware failures, software defects, and system performance bottlenecks.</p> <p>Students can improve the efficiency and accuracy of problem solving through the use of professional tools and methods, such as fault tree analysis and logical analysis, etc.</p>	R2,R5
	CLO-3	<p>Students can understand the application of electronic information engineering in various fields of society, such as medical care, transportation, and education, etc., and realize the impact and contribution of engineering to society.</p> <p>In the internship program, the impact of engineering practice on society, culture, environment and economy is considered to develop students' awareness of engineering ethics.</p>	R6

	CLO-4	<p>Focus on the impact of electronic information engineering practices on the environment, such as energy consumption of electronic equipment and e-waste disposal, etc.</p> <p>In the process of project design and implementation, students try to adopt measures such as environmentally friendly materials and energy-saving technologies to promote sustainable development.</p>	R7
	CLO-5	<p>Understand the professional norms and standards of the electronic information engineering industry, such as engineering ethics, intellectual property rights, and data protection, etc.</p> <p>In the process of internship, strictly abide by professional norms, and establish a good professional image.</p>	R8
	CLO-6	<p>Through the internship, exercise students' professional skills and comprehensive quality, such as independent learning ability, time management ability.</p> <p>In team projects, students learn to cooperate with team members to complete tasks together, and cultivate team spirit and collaboration ability.</p>	R9
	CLO-7	<p>Improve communication skills with colleagues, superiors and clients, and be able to express views and ideas clearly and accurately.</p> <p>By participating in project discussions and meetings, students learn to listen to others, respect different points of view, and promote effective communication.</p>	R10

	CLO-8	<p>Preliminarily master the basic knowledge and skills of project management, such as project planning, schedule control, and risk management, etc.</p> <p>During the internship program, students can participate in project management activities and understand the whole process and importance of project management.</p>	R11
	CLO-9	<p>Recognize the rapid development and changing trends in the field of electronic information engineering and establish a concept of lifelong learning.</p> <p>In the process of internship, students can actively learn new technologies and knowledge, and constantly update their knowledge system to prepare for future career development.</p>	R12
Content	<p>Graduation internship aims to combine theory with practice, which is an important link in the teaching process of colleges and universities. Its purpose is to verify and test the professional knowledge and skills students have learned. Through the adaptability training of jobs, students can understand the society, get in touch with the reality, enhance the mass view, labor view, socialist dedication and sense of responsibility, enhance their quality, and improve their professional awareness. Students can obtain the primary practical aspects of this major, cultivate the initial independent work ability and professional skills, and get a comprehensive exercise in thought and business.</p>		
Study and examination requirements and forms of examination	<p>The course uses the XIAOYOUNG platform for grade evaluation, in which the internship unit's score accounts for 30% of the total score, the ideological and political advisor's score 40% , and the full-time advisor's score 30%. The evaluation includes internship performance, internship weekly records, internship reports, and registration, etc.</p>		
Media employed	Computer		

Reading List	/
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86 Thesis

Thesis

Curriculum name	Thesis		
Curriculum level	Undergraduate		
Curriculum code	05A21086		
Module	Engineering Practice Module		
Semester	8th semester		
Contact person	Yuhui WU		
Lecturer	/		
Language	Chinese		
Relation to curriculum	Compulsory		
Teaching methodology, Teaching hours	Practical methodology (thesis writing)		
Workload	360 class hours in total (1 class hour=1 hour, 1 ECTS=30 hours) Thesis writing: 360 class hours (12 credit points*30 class hours, average 5 days per week, 6 class hours per day, within 12 weeks, including reference reading, data retrieval, thesis writing and modification, production and debugging of graduation design).		
Credit points	12 credit points		
Recommended prerequisites	Programme Skill Certificates, Comprehensive Program Practice, Embedded System Principle and Application, MCU Principle and Application, C Language Programming Electronic Technology Skills Training, Analog Electronic Technology, Digital Electronic Technology, and Signal and System		
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO)	Description	Supported Intended Learning Objective (ILOs)

	CLO-1	During the writing of the paper, students learn to consult, organize, and cite the literature.	R1
	CLO-2	In the paper writing, students learn the basic writing methods and format requirements of the paper. The full text punctuation is not wrong, the expression is concise and reasonable, the logical order is appropriate, the whole paper layout is scientific, and the research method is scientific.	R2
	CLO-3	Understand that papers reflect professional literature in a certain field. It is important to be rigorous in scientific presentation, and follow academic norms. Do not copy other people's papers.	R3
	CLO-4	Pay attention to the latest research results and core problems to be solved related to electronic information engineering, and learn about the outstanding achievements made by domestic cutting-edge high-tech enterprises such as Huawei and DJI. In the process of writing the paper, students try to achieve excellence, step by step improvement, and step by step down-to-earth continuous promotion.	R4,R5
	CLO-5	Learn to review and revise papers, read review reports, and understand that paper writing is a creative activity of human beings, and AI writing can not replace human brain function. Master the preparation of defense PPT and defense practice.	R8

	CLO-6	In the production process of graduation design, understand the production process and principle of PCB, can use software to draw circuit schematic diagram and PCB circuit diagram. Master basic debugging methods of hardware and software, be able to solve specific problems, and reasonably arrange steps and content of debugging, and detailed description of the thesis, so as to really understand and draw examples.	R5,10,11,12
Content	<p>Thesis (design) writing aims to exercise students' academic writing ability and the ability to use knowledge and scientific tools to solve complex problems in electronic information engineering. It is an important link in the teaching process of colleges and universities, and its purpose is to verify and test students' comprehensive application of professional knowledge and skills to solve problems. Through the writing of the graduation thesis and the production of the graduation design, the students' ability to initially raise questions, explore problems and solve problems is trained, and their basic scientific research ability is cultivated, laying a solid foundation for further study in this field in the future. Students can deepen understanding of the electronic information field, and get a comprehensive exercise in the comprehensive knowledge application and literature retrieval, reading and writing.</p>		
Study and examination requirements and forms of examination	<p>The course uses the GOCHECK platform for grade evaluation, in which the instructor's grade accounts for 45% of the total grade, the reviewer's grade 20% , and the thesis defense grade 35% . Evaluation includes paper format, topic significance and background, paper connotation, paper workload, physical production effect, defense performance, and defense PPT, etc.</p>		
Media employed	Computer		
Reading List	/		