

Information Management and Information Systems

(Grade 2024)

Course code: 120102

I. Cultivation Objectives

1. General cultivation objective

The program strives to cultivate application-oriented engineering and technical talents with comprehensive development of morality, intellect, physique, aesthetics and labour, who have social responsibility, international perspective, good professional foundation, comprehensive humanities, solid foundation in economic and management theories, technical knowledge related to information and engineering, background knowledge of manufacturing industries, mastery of the methods and techniques of planning, analysis and design of information systems, and ability to develop, implement, operate and maintain information systems and information resources. After graduation, they will be able to engage in information system construction, information management and decision analysis in organizations such as national management departments at all levels, information technology or manufacturing companies.

2. Objective of value guidance

Led by the spirit of model workers and craftsmanship, this programme guides students to establish correct information values and professional ethics, and cultivates professional talents with firm ideals and beliefs, high ideological morals, a mental attitude of being better and pursuing excellence, and a broad international perspective.

3. Five years after graduation, students in this programme should achieve the following objectives:

(1) Have passion for the motherland, strong legal awareness, high moral values and social responsibility; a solid personality and good scientific and cultural literacy; and commitment to professional ethics.

(2) Master the necessary background knowledge of the manufacturing industry. Be able to apply professional knowledge to engage in professionally relevant technical and management work, and to engage in the construction of production management information systems, system operation and maintenance, data analysis and exploration, information services and consultancy, knowledge management and innovation in the field of intelligent manufacturing.

(3) Have the ability to learn throughout life. Be able to improve professional quality and continuously adapt to the needs of society through independent learning based on the international level of development of the Information Management and Information Systems.

(4) Have a strong team spirit and solid foreign language communication skills, and be able to work in multidisciplinary teams or cross-cultural environments, with a focus on social harmony and sustainable development.

(5) Be able to track technical and business developments in the Information Management and Information Systems. Have the spirit of innovation as well as the ability to innovate in technology management and ability to assist and lead the transformation and upgrading tasks of traditional manufacturing companies.

II. Requirement for Graduation

1. Character and moral integrity: Have humanistic qualities, scientific spirit, professionalism, social responsibility and positive attitude. Understand national, social and public situations and practise core values of socialist

1-1 Have humanistic qualities, understand and practise the core values of socialist, respect life, care for others, advocate justice, act with integrity, safeguard national interests, and have responsibility and commitment to promote social progress.

1-2 Understand the nature and responsibilities of the Information Management and Information Systems, be conscious of the ethics and codes of practice and take into account the factors like practical needs of business management, social, health, safety, legal, cultural and environmental in their practice.

2. Professional knowledge: Have solid basic knowledge, professional knowledge and professional skills, master the basic research methods of the profession, and understand the latest developments and development trends of Information Management and Information Systems and related fields.

2-1 Have strong foundations in mathematics, natural sciences, humanities and languages.

2-2 Master basic theories, knowledge and methods in management, economics, operations research and statistics. Understand and master the fundamentals and methods of data analysis, and be able to apply them in a multidisciplinary environment.

2-3 Master the necessary background knowledge of the manufacturing industry and understand the characteristics and current situation of information management systems in manufacturing enterprises; master the basic theory, knowledge and methods of computer technology; understand and master the basic knowledge and methods of design and development of production management information systems in manufacturing industries and be able to apply them in a multidisciplinary environment.

3. Ability to innovate: Be able to think logically and creatively. Have ability to identify, analyse and evaluate phenomena and problems in Information Management and Information Systems and related fields, and to form personal judgements and opinions.

3-1 Be able to identify, analyse and evaluate key engineering issues in complex information systems, as well as being able to analyse data and present problems. Be able to conduct research or needs analysis through literature research and analysis, professional internships and social practice experiences, and make relevant syntheses in order to obtain valid conclusions.

3-2 Have certain ability to identify and prevent risks in management systems.

4. Ability to use knowledge: Be able to solve complex engineering problems. Have ability to analyse engineering problems related to complex information systems and be able to design solutions to information technology problems that meet complex application scenarios and complex management processes.

4-1 Be able to develop solutions to the characteristics of complex engineering problems, apply relevant logical thinking in information management, data analysis algorithms and intelligent manufacturing expertise to identify information system processes, carry out information system process modelling and data modelling, and design information systems, appropriate management processes and data analysis and presentation content to meet specific needs.

4-2 Be able to select appropriate system development methods and models and algorithms for data analysis based on information system design options.

4-3 Be able to develop appropriate maintenance and management programmes for information system.

5. Ability to use information: Have ability to use information technology. Be able to use appropriate modern information technology tools and instruments to solve practical problems in production management information system projects and be able to understand the limitations of relevant tools and methods.

5-1 Be able to apply one or more modern information technology and engineering tools to solve practical problems in the analysis, design, implementation, operation and maintenance of production management information systems according to the needs of the complex information systems engineering problems under study.

5-2 Be able to analyse and predict industrial and management data using appropriate analytical tools, and understand the limitations of the tools or algorithms used and the ways to improve them.

6. Communication and Expression: Have strong communication and expression skills. Be able to communicate effectively with peers, clients, and the public through verbal and written expressions.

6-1 Be able to express ideas through oral presentation, reports writing, texts design and statements presenting.

6-2 Be able to communicate and interact effectively with industry peers and the public on complex information systems engineering issues.

7. Teamwork: Have good teamwork capability. Be able to work harmoniously and collaboratively with team members and to play an active role in team activities as a member or leader.

7-1 Be able to perform and assume team roles and responsibilities in a multidisciplinary context.

7-2 Have an early ability to use appropriate management systems, organize and manage programmes, understand the coordination of organizational tasks and rationalize resources.

8. International perspective: Have International perspective and international understanding. Have understanding of international trends, concern for global issues, and understand and respect for the differences and diversity of the world's different cultures.

8-1 Have knowledge of at least one foreign language. Be able to understand and respect the differences and diversity of the different cultures of the world.

8-2 Be skilled in using online resources to keep up with international developments and read relevant literature. Have a basic understanding of the international current status of the Information Management and Information Systems and its related fields, and be attentive to current technological advances and social development needs.

9. Learning and development: Have spirit of lifelong learning and ability to self-manage and learn independently. Be able to adapt to social and personal sustainable development through continuous learning.

9-1 Be able to correctly understand the necessity of self-exploration and independent learning. Have an awareness of independent and lifelong learning; be able to maintain an interest in advanced science and technology.

9-2 Be able to learn independently for personal or professional development needs. Master independent learning methods, understand ways to expand knowledge and improve competencies, adapt to development, and demonstrate effectiveness in independent learning and exploration.

III. Schooling System

Four years.

IV. Length of Study

Flexible study period, generally four years, the minimum length of flexibility is not less than three years, the longest not more than six years.

V. Requirements for Graduation and Degree Conferring

Students of this program must complete the minimum credits required for each category of courses and complete all the content specified in Students of this program must complete the minimum credits required for each category of courses and complete all the content specified in extracurricular class. students of this program must complete the minimum credits required for each category of courses and complete all the content specified in extracurricular class Students of this program must complete the minimum credits required for each category of courses and complete all the content specified in extracurricular class according to the requirements of the instructional training plan, and the total credits must reach 163 credits for graduation; Those who meet the requirements for bachelor's degree can be conferred bachelor degree in Management Science.

VI. Discipline

Management Science and Engineering, Computer Science and Technology

VII. Core Courses

Management (English-taught), Principles of Accounting, Statistics for Applications, Operations Research, ERP Principles and Applications, Management Information Systems (English-taught), Analysis and Design of Information Systems, Database Principles and Applications, Object Oriented Programming Language, Intelligent Analysis of Industrial Big Data, WEB Application Design, Practice for Intelligent Manufacturing Execution System (MES)

VIII. Course Structure and Course Hours (excluding Extracurricular Class)

Course Type	Total Credits	%	Total Course Hours	Theory Learning	Practical Training
Public Fundamental Course	58.5	36	1072	982	90
General Education	10	6	160	160	0
Professional Fundamental Course	29	18	464	362	102
Professional Course	31	19	496	352	144
Professional Practice	33.5	21	952	0	952
Total	162	100	3144	1856	1288
Theory: Practical (%)	59:41				

IX. Teaching schedule (1)

Category	Type	Provided by	Course Code	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester
Public Fundamental Course	required	School of Marxism	b1080001	Basic Principles of Marxism	test	3	48	42	6	Spring 1
	required	School of Marxism	b1080009	Ethics and the Rule of Law	non-test	3	48	42	6	Spring 1
	required	School of Marxism	b1080006	Outline of Modern Chinese History	non-test	3	48	42	6	Autumn 1
	required	School of Marxism	b1080010	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	test	3	48	42	6	Spring 2
	required	School of Marxism	b1080011	Introduction to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era	test	3	48	42	6	Autumn 2
	required	School of Marxism	---	Situation and Policy (Modules 1 to 4)	non-test	2	32	28	4	Autumn 1 to Spring 2
	required	School of Foreign Language and Cultural Communication	b1020018	Academic Chinese	non-test	2	32	32		Autumn 1
	required	School of Intelligent Manufacturing and Control Engineering	b2011470	Scientific and Technical Paper Writing and Literature Search	non-test	2	32	32		Autumn 1
	required	School of Mathematics, Physics and Statistics	b1020080	Advanced Mathematics A1	test	4	64	64		Autumn 1
	required	School of Mathematics, Physics and Statistics	b1020081	Advanced Mathematics A2	test	4	64	64		Spring 1
	required	School of Mathematics, Physics and Statistics	b1020012	Linear Algebra	test	2	32	32		Spring 2
	required	School of Mathematics, Physics and Statistics	b1020013	Probability Theory and Mathematical Statistics	test	2	32	32		Autumn 2
	required	College of Physical Education	---	Physical Education I to VI	non-test	3	160	160		Autumn 1 to Autumn 4
	required	Others	b1110003	Military skills	non-test	0.5	2W			Autumn 1
	required	Others	b1110002	Military theory	non-test	0.5	32	32		Autumn 2
	required	School of Marxism	b1080008	Labour Education A	non-test	0.5	16	16		Autumn 2
	required	Others	b1110004	Mental Health Education for University Students	non-test	2	32	16	16	Autumn 1
	required	School of Mathematics, Physics and Statistics	b1020062	Academic Physics A (Module 1)	test	3	48	48		Spring 1
	required	School of Mathematics, Physics and Statistics	b1020065	Academic Physics B	test	2	32	32		Autumn 2
	required	School of Mathematics, Physics and Statistics	b1020111	Academic Physics C	non-test	2	32		32	Spring 1
	required	School of Foreign Language and Cultural Communication	b1020003	General English III	test	3	48	48		Autumn 1
	required	School of Foreign Language and Cultural Communication	b1020004	General English IV	test	3	48	48		Spring 1
	required	School of Foreign Language and Cultural Communication	b1020005	General Academic English A	test	2	32	32		Autumn 2
required	School of Foreign Language and Cultural Communication	---	English Knowledge Expansion	non-test	2	32	32		Spring 2	
required	School of Computer and Information Engineering	b1012001	Artificial Intelligence Application and Practice	non-test	1	16	8	8	Autumn 1	
required	School of Resources and Environment	b1012002	Green, Low-carbon and Ecological Civilization	non-test	1	16	16		Spring 1	
Subtotal (Public Fundamental Course)						58.5	1072	982	90	
General Education	required	Art Education Center	b0----	Aesthetic Education	non-test	2	32	32	0	Autumn, Spring
	required	Each Colleges	b0----	Social Sciences and Humanistic Qualities	non-test	4	64	64	0	Autumn, Spring
				Natural Sciences and Technology Innovation	non-test	4	64	64	0	Autumn, Spring
Subtotal (General Education)						10	160	160		

IX. Teaching schedule (2)

Category	Type	Provided by	Course Code	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester	
Professional Fundamental Course	required	School of Intelligent Manufacturing and Control Engineering	b2011532	Introduction to Computer Science	test	3	48	24	24	Spring 1	
	required	School of Intelligent Manufacturing and Control Engineering	b2011509	Management Information Systems (English-taught)	test	2	32	24	8	Autumn 2	
	required	School of Intelligent Manufacturing and Control Engineering	b2011277	Management (English-taught)	test	3	48	48	0	Autumn 2	
	required	School of Intelligent Manufacturing and Control Engineering	b2011118	Database Principles and Applications	test	3	48	36	12	Autumn 2	
	required	School of Intelligent Manufacturing and Control Engineering	b2011390	Object-oriented programming languages	test	3	48	32	16	Spring 2	
	required	School of Intelligent Manufacturing and Control Engineering	b2011533	Economics	test	3	48	48	0	Spring 2	
	required	School of Intelligent Manufacturing and Control Engineering	b2011278	Statistics for Applications	test	3	48	32	16	Spring 2	
	required	School of Intelligent Manufacturing and Control Engineering	b2011464	Operations Research	non-test	3	48	40	8	Spring 2	
	required	School of Intelligent Manufacturing and Control Engineering	b2011534	Principles of Accounting	test	3	48	48	0	Spring 2	
required	School of Intelligent Manufacturing and Control Engineering	b2011458	Analysis and Design of Information Systems	non-test	3	48	30	18	Autumn 3		
subtotal (Professional Fundamental Course)						29	464	362	102		
Professional Course	required	School of Intelligent Manufacturing and Control Engineering	b2011242	Introduction to Information Management and Information	non-test	1	16	14	2	Autumn 1	
	required	School of Intelligent Manufacturing and Control Engineering	b2011251	Introduction to Intelligent Manufacturing	non-test	2	32	28	4	Autumn 2	
	required	School of Intelligent Manufacturing and Control Engineering	b2011515	WEB Application Design	non-test	3	48	16	32	Autumn 3	
	required	School of Intelligent Manufacturing and Control Engineering	b2011287	ERP principles and applications	test	3	48	32	16	Autumn 3	
	required	School of Intelligent Manufacturing and Control Engineering	b2011456	Python design	test	3	48	24	24	Autumn 3	
	required	School of Intelligent Manufacturing and Control Engineering	b2011472	Data Structures and Algorithms	test	3	48	42	6	Spring 3	
	required	School of Intelligent Manufacturing and Control Engineering	b2011487	Industrial Internet	test	3	48	48	0	Spring 3	
	required	School of Intelligent Manufacturing and Control Engineering	b2011556	Intelligent Analysis of Industrial Big Data	test	3	48	32	16	Spring 3	
	required	School of Intelligent Manufacturing and Control Engineering	b2011143	Project Management	non-test	2	32	26	6	Spring 3	
	Subtotal (Required Professional Course)						23	368	262	106	
	Selective 8 credits		School of Intelligent Manufacturing and Control Engineering	b2011084	Computer networks and applications	non-test	2	32	24	8	Autumn 3
			School of Intelligent Manufacturing and Control Engineering	b2011536	Data visualization design	non-test	2	32	16	16	Autumn 3
			School of Intelligent Manufacturing and Control Engineering	b2011058	Supply Chain and Logistics Management	non-test	2	32	24	8	Spring 3
			School of Intelligent Manufacturing and Control Engineering	b2011522	Artificial Intelligence Technology and Applications	non-test	2	32	26	6	Spring 3
			School of Intelligent Manufacturing and Control Engineering	b2011452	Software Testing Technology	non-test	2	32	16	16	Autumn 4
			School of Intelligent Manufacturing and Control Engineering	b2011372	Operations Management (English-taught)	test	3	48	48	0	Autumn 4
			School of Intelligent Manufacturing and Control Engineering	b2011379	Intelligent Analytics for Business (English-taught)	test	3	48	48	0	Autumn 4
		School of Intelligent Manufacturing and Control Engineering	b2011537	Decision Support Systems	non-test	2	32	16	16	Autumn 4	
		School of Intelligent Manufacturing and Control Engineering	b2011149	Information Resource Management	non-test	2	32	32	0	Autumn 4	
		School of Intelligent Manufacturing and Control Engineering	b2011035	E-commerce	non-test	2	32	32	0	Autumn 4	
	School of Intelligent Manufacturing and Control Engineering	b2011451	Information Systems Security	non-test	2	32	24	8	Autumn 4		
Subtotal (Selective Professional Course)						8	128	90	38		

Subtotal (Professional Course)						31	496	352	144	
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IX. Teaching schedule (3)

Category	Type	Provided by	Course Code	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester
Professional Practice	required	Engineering Training	b1090001	Basic Engineering Training B	non-test	2	48		48	Spring 1
	required	School of Intelligent Manufacturing and Control Engineering	b4011325	Application Project of Office Software	non-test	2	48		48	Summer 1
	required	School of Intelligent Manufacturing and Control Engineering	b4000018	Innovation and Entrepreneurship in Information Management and Information Systems	non-test	2	48		48	Summer 1
	required	School of Intelligent Manufacturing and Control Engineering	b4011339	Labour Education B	non-test	0.5	16		16	Spring 3
	required	School of Intelligent Manufacturing and Control Engineering	b4011366	Design practices for system prototyping	non-test	2	48		48	Spring 2
	required	School of Intelligent Manufacturing and Control Engineering	b4011367	Elementary practice for system development	non-test	3	72		72	Summer 2
	required	School of Intelligent Manufacturing and Control Engineering	b4011369	Elementary practice for Data Analysis	non-test	2	48		48	Summer 2
	required	School of Intelligent Manufacturing and Control Engineering	b4011368	Practice for Intelligent Manufacturing Execution System (MES)	non-test	3	72		72	Spring 3
	required	School of Intelligent Manufacturing and Control Engineering	b4011370	Comprehensive practice for system development	non-test	3	72		72	Summer 3
	required	School of Intelligent Manufacturing and Control Engineering	b4011372	Comprehensive practice for Data Analysis	non-test	2	48		48	Summer 3
	required	School of Intelligent Manufacturing and Control Engineering	b4011371	Elementary practice for Industrial Internet	non-test	3	72		72	Autumn 4
	required	School of Intelligent Manufacturing and Control Engineering	b4011404	Comprehensive practice in Enterprise	non-test	3	72		72	Autumn 4
	required	School of Intelligent Manufacturing and Control Engineering	b4011254	Information Management and Information Systems Graduation Internship and Graduation Design (Thesis)	non-test	6	288		288	Spring 4
Subtotal (Professional Practice)						33.5	952		952	
Extracurricular Class	required	Others	b5110001	Extracurricular Class	non-test	1	-	-	-	Autumn, Spring, Summer
Total						163	3144	1856	1288	

X. Credit of Extracurricular Class

Through taking extracurricular classes, students are encouraged to take part in academic lectures, social practice activities, campus cultural and Through taking extracurricular classes, students are encouraged to take part in academic lectures, social practice activities, campus cultural and Through taking extracurricular classes, students are encouraged to take part in academic lectures, social practice activities, campus cultural and sports activities, innovative and entrepreneurial activities, voluntary activities, etc. to improve their social adaptability and enhance the Details are specified in Students' Manual.