

# 信息管理与信息系统

## Information Management and Information System

专业代码: 120102

学 制: 4 年

Program Code: 120102

Duration: 4 years

### 培养目标:

本专业培养具有良好数学基础、经济学基础和现代管理基础;掌握量化管理决策方法以及信息系统的规划、分析、设计、实施和管理等方面的技术;具备较强的逻辑思维能力、计算机科学技术知识运用能力、以及信息系统和信息资源开发利用的实践和研究能力;能在国家各类管理部门、财政金融、证券投资、银行等大型工商企事业单位或高等学校从事信息管理和信息系统的规划、分析、设计、实施及评价等工作的社会主义新型高级工程人才。

### Educational Objectives:

This specialty aims to train new type of advanced engineering talents, who have excellent mathematical, economic and modern management foundation; systematically grasp the quantitative management decision method, information system and information technology, and the technology for information system planning, analysis, design, implementation and management; have good logical mind, the stronger ability to apply computer science and technology, and the practice and research ability to develop and exploit information system; and are qualified for the work on information managing and information system planning, analysis, design, implementation, evaluation in all kinds of administration sectors, some large enterprises and institutions such as fiscal and financial institution, investment securities, bank, colleges and universities.

### 毕业要求:

№1.职业道德与规范:具备良好的法律意识、职业道德和社会责任感;具有正确的人生观、价值观和道德观。

№2.自然科学与人文素养:了解自然科学与社会科学中的基础和前沿知识,具有的良好科学文化素养。

№3.专业知识与素养:掌握扎实的数学基础和专业领域知识,具有良好数学思维和素养。

№4.分析与解决问题:运用数学和专业领域知识以及计算机技术分析和解决实际问题。

№5.研究:熟悉高级专业知识,能够运用科学原理与方法对理论及应用问题进行研究。

№6.沟通:能够与同行及社会公众进行有效的沟通和交流,具备一定的国际视野,可以在跨文化背景下进行沟通和交流。

№7.团队合作:具有较强的团队意识,能够承担团队成员及负责人的角色。

№8.终身学习:具有自主学习和终身学习的意识,具备不断学习和适应发展的能力。

### **Student Outcomes:**

№1. Professional ethics and norms: To have good sense of law, professional ethics and social responsibility; and to have correct philosophy of life, values and ethics.

№2. Natural science and humanities: To have good scientific literacy, and to know the basic knowledge and frontier knowledge.

№3. Professional knowledge and accomplishment: To grasp solid knowledge of mathematics and professional knowledge, and to have good mathematical thinking and mathematical literacy.

№4. Analysis and problem solving: An ability to apply the mathematics and professional knowledge and computer technology to analyze and resolve the problems.

№5. Research: An ability to be familiar with advanced professional knowledge, and to conduct investigation on theory and application problems by means of scientific theories and methods.

№6. Communication: An ability to communicate effectively with the community and society at large, and communicate in cross-cultural contexts with international perspective.

№7. Team work: Strong sense of teamwork, and ability to play the role of team members and managers.

№8. Lifelong Learning: A recognition of the need for, and an ability to engage in independent and life-long learning with the ability to learn continuously and adapt to new developments.

### **专业简介:**

信息管理与信息系统专业是广东省名牌专业，从1994年开始招生。该专业隶属工学，是一门融合数学、管理学、信息科学与信息技术、以及经济学的交叉性学科；一方面，以系统的观点为指导，应用信息系统分析与设计的方法，实测各类社会系统的运行状况，辅助解决其中的管理问题；另一方面，运用计算机技术和数值优化算法对经济、管理、金融等领域中的信息进行采集、分析、预测，采用定量与定性分析相结合的办法，辅助企业进行科学化决策与管理。

本专业办学条件良好，师资力量雄厚。现在拥有学生机房5个，各类工作室30间，多媒体学术交流室、报告厅6个。信息与计算科学专业拥有105平方米的图书资料室，共有图书6667册、英文黄皮书1838册；期刊88种，包括44种纯数学类期刊。丰富的藏书和网络资源极大地满足了师生的学习工作需要。

信管专业重视人才培养，特别注重学生数学应用能力和数学素质的培养，与许多固定单位都有长期合作，例如，上海汉得信息技术股份有限公司、广州市年成软件有限公司、中国国际期货有限公司、广东掌中万维电子有限公司校外实习基地等。

### **Program Profile:**

This specialty is the brand one of Guangdong province, and begins to enroll in 1994. It is an interdisciplinary to compromise the knowledge from mathematics, management, information science and information technology, and economic; one one hand, guided by systematic view, it applies the technology of information system analysis and design for checking the operation status of all kinds of social systems

and help them to resolve the management problems involved, and on the other hand, it applies the computer technology and numerical optimization algorithms for collecting, analyzing and predicting the information from the fields of economic, management and finance, and then help enterprises to make scientific decision and management by combining the qualitative analysis with quantitative analysis.

This specialty has good conditions on running it and strong teachers. At present, it has a total of 20 teachers, including 2 doctoral tutors, 5 professors, 8 associated professors, and 7 assistants. Now it has five student rooms, all kinds of studio 30, multimedia academic exchange room, 6 lecture halls; it also has a library of 105 square meters of books, a total of 6667 books, 1834 copies of English Yellow Book; periodicals 88, including 44 kinds of pure mathematics journals. Rich collection of books and network resources to greatly meet the needs of teachers and students to study and work.

This specialty pays attention to personnel training, the ability of mathematics application and the cultivation of mathematical quality. It has long-term cooperation with many fixed companies such as Shanghai HanDe Information Technology Incorporated Company, Guangzhou Nian Cheng Software Incorporated Company, China International Forward Incorporated Company, and Practice Base of Guangdong WanWei Electronic Incorporated Company.

#### **专业特色：**

专业设置在数学学院，较强的数学与统计学基础是其优势，强调量化分析与量化决策；在管理和计算机核心内容基础上，强化了运筹优化、统计与大数据分析、人工智能与机器学习等在信管专业起核心作用的相关课程，突出系统化和量化在信息管理中的作用。

#### **Program Features:**

Our Information Management and Information System specialty is set in the School of Mathematics, and stronger mathematical and statistical basis is its remarkable advantage. This specialty emphasizes quantitative analysis and quantitative decision making, enhances the key role of operations research, optimization, statistics and large data analysis, artificial intelligence and machine learning in the related courses, on the basis of management and computer, and emphasizes the role of systematization and quantization in the information management.

**授予学位：**工学学士学位

**Degree Conferred:** Bachelor of Engineering

#### **主干课程：**

数学分析、高等代数、概率论、数理统计、运筹学、微观经济学、管理学、数据库系统、信息系统分析与设计、数据挖掘与统计决策。

#### **Core Courses:**

Mathematical Analysis, Advanced Algebra, Probability Theory, Mathematical Statistics, Operations Research, Microeconomics, Management, Database Systems, Information System Analysis & Design, Database Applications, Data Mining and Statistical decision.

**特色课程:**

全英语教学课程: 微分方程定性方法与数值模拟

双语教学课程: 数理统计、运筹学.

专题研讨课: 宏观经济学、管理学

创新实践课程: 数学软件与数学实验、统计软件

创业教育课程: 大数据应用

**Featured Courses:**

Courses Taught in English: The Qualitative Methods and Numerical Simulation for Differential Equations

Bilingual Courses: Mathematical Statistics, Operational Research, Stochastic Process.

Research Courses: Macroeconomic, Management:

Innovation Practice: Mathematical software and mathematical experiment, Statistical software

Entrepreneurship Courses: Big Data Application

### 一、教学计划总体安排表 (General Teaching Schedule)

学 年	学 期	教 学 进 度 安 排 (周)																		理 论 教 学	考 试	入 学 教 育	军 训	课 程 设 计	大 作 业	工 程 训 练	电 子 实 习	综 合 实 验	社 会 实 践	生 产 实 习	毕 业 实 习	其 它 项 目	中 外 合 作 项 目	毕 业 设 计	就 业 安 排	机 动 期	假 期	小 计				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18																				19	20		
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R																							
一	1		C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	D	D	D	14	1	1	3								19									
	2	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	Q	B	B	B	16	2		2								20									
二	3	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	Q	B	B	B	16	2		2								20									
	4	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	Q	B	B	B	16	2		2								20									
三	5	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	Q	B	B	B	16	2		2								20									
	6	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	Q	B	B	B	16	2		1							1	20									
四	7	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	Q	B	B	B	16	2									2	20										
	8	L	L	L	O	O	O	O	O	O	O	O	O	O	O	O	O	O	P	P							3			15	2		20									
合 计 (周)																				110	13	1	3	9													3		15	2	3	159

### 二、各类课程学分登记表 (Registration Form of Curriculum Credits)

#### 1. 学分统计表 (Credits Registration Form)

课程类别 Course Category	课程要求 Requirement	学分 Credits	学时 Academic Hours	备注 Remarks
公共基础课 General Basic Courses	必修 Compulsory	61.0	940	
	通识 General Education	10.0	160	
	选修 Elective	2.0	32	
学科基础课 Disciplinary Basic Courses	必修 Compulsory	46.5	752	
	选修 Elective	0	0	
专业领域课 Specialty-related Courses	必修 Compulsory	0	0	
	选修 Elective	21.5	344	
合 计 Total		141.0	2228	
集中实践教学环节 (周) Practice Training (Weeks)	必修 Compulsory	32.0	32 周	
	选修 Elective	4.0	4 周	
毕业学分要求 Credits Required for Graduation	141.0+36.0=177.0			

备注：学生在取得专业教学计划规定学分的同时，还必须取得第二课堂 2 个人文素质教育学分和 4 个创新能力培养学分。

## 2.类别统计表 (Category Registration Form)

学时 Academic Hours					学分 Credits						
总学时数 Total	其中 Include		其中 Include		总学分数 Total	其中 Include		其中 Include			其中 Include
	必修学时 Compulsory	选修学时 Elective	理论教学学时 Theory Course	实验教学学时 Lab		必修学分 Compulsory	选修学分 Elective	集中实践教学环节学分 Practice-concentrated Training	理论教学学分 Theory Course Credits	实验教学学分 Lab	创新创业教育学分 Innovation and Entrepreneurship Education
2228	1692	536	1948	280	177	139.5	37.5	36	132	9	10.5

### 三、专业教学计划表 (Teaching Schedule)

类别 Course Category	课程 代码 Course No	课程名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours				学分 数 Credits	开课 学期 Semester	毕业 要求 Student Outcomes	
				总学 时 Class Hours	上机 Computer-ai ded Class Hours	实验 Lab Hours	实践 Practice Hours				
公共基础课 General Basic Courses	143093	思想道德修养与法律基础 Ideological and Moral Cultivation and Legal Basis	必修课 C	(40) (36)				2.5	2	No1	
	143091	中国近现代史纲要 Skeleton of Chinese Modern History		(32) 24				2.0	1	No2	
	143106	毛泽东思想和中国特色社会主义理论体系概论 Mao Zedong Thought and Introduction to Socialist Theory with Chinese Characteristics		(80) 48				5.0	4	No1,2	
	143090	马克思主义基本原理 Basic Principles of Marxism		(40) 36				2.5	3	No1,2	
	143094	形势与政策 Situation and Policy		(128)				2.0	1-8	No1,2	
	144001	大学英语 (一) College English(1)		64				4.0	1	No6,8	
	144002	大学英语 (二) College English(2)		64				4.0	2	No6,8	
	152001	体育 (一) Physical Education (1)		32			32	1.0	1	No8	
	152002	体育 (二) Physical Education (2)		32			32	1.0	2	No8	
	152003	体育 (三) Physical Education (3)		32			32	1.0	3	No8	
	152004	体育 (四) Physical Education (4)		32			32	1.0	4	No8	
	106001	军事理论 Military Principle		(16)				1.0	2	No1	
	141001	大学物理 (一) General Physics (1)		48				3.0	2	No2	
	141002	大学物理 (二) General Physics (2)		48				3.0	3	No2	
	141007	大学物理实验 (一) Physics Experiment(1)		32		32		1.0	2	No2	
	141008	大学物理实验 (二) Physics Experiment(2)		32		32		1.0	3	No2	
	140042	数学分析 (一) Mathematical Analysis(1)		80				5.0	1	No3,4	
	140043	数学分析 (二) Mathematical Analysis (2)		96				6.0	2	No3,4	
	140044	数学分析 (三) Mathematical Analysis (3)		96				6.0	3	No3,4	
	140033	高等代数 (上) Advanced Algebra		64				4.0	1	No3,4	
	140034	高等代数 (下) Advanced Algebra		80				5.0	2	No3,4	
	140215	数学分析习题课 (一) Mathematical Analysis Exercise (I)		26	选修课 E				1.5	1	No3,4
	140216	数学分析习题课 (二) Mathematical Analysis Exercise (II)		32					2.0	2	No3,4
	140217	数学分析习题课 (三) Mathematical Analysis Exercise (III)		32					2.0	3	No3,4
	140218	高等代数习题课 (一) Advanced Algebra Exercise (I)		26					1.5	1	No3,4

	140219	高等代数习题课(二) Advanced Algebra Exercise (II)		32				2.0	2	№3,4
	145223	大学计算机基础 College Computer Basis		32				2.0	1	№4
		人文科学领域 Humanities	通 识 课 E	96				6.0		№2
		社会科学领域 Social Science	E	64				4.0		№2
	<b>合 计</b> <b>Total</b>			必 C	940		64	128	61.0	
			选 E	选修课修读最低要求学分 12.0 (含通识学分 10.0) Minimum selective course credits required 12.0						

### 三、专业教学计划表(续) (Teaching Schedule)

类别 Course Category	课程 代 码 Course №	课 程 名 称 Course Title	是 否 必 修 C/E	学 时 数 Total Curriculum Hours				学 分 数 Credits	开 课 学 期 Semester	毕 业 要 求 Student Outcomes	
				总 学 时 Class Hours	上 机 Computer-aided Class Hours	实 验 Lab Hours	实 践 Practice				
学科基础课 Disciplinary Basic Courses	140036	解析几何 Analytic Geometry	必 C	48				3.0	1	№3,4	
	140088	C++程序设计 C++ Programming	必 C	80	16			4.5	2	№3,4	
	140076	数据结构 Data Structures	必 C	64				4.0	3	№3,4	
	140030	常微分方程 Ordinary Differential Equations	必 C	64				4.0	3	№3,4	
	140110	微观经济学 Microeconomics	必 C	64				4.0	3	№3,4	
	140072	概率论 Probability Theory	必 C	64				4.0	4	№3,4	
	140332	数值优化算法 Numerical Optimization Algorithms	必 C	64				4.0	4	№3,4,5	
	140220	数据库系统 Database Systems	必 C	64				4.0	4	№3,4	
	140062	数理统计 Mathematical Statistics	必 C	64				4.0	5	№3,4	
	140059	运筹学 Operations Research	必 C	64				4.0	5	№3,4	
	140164	信息系统分析与设计 Information System Analysis & Design	必 C	48				3.0	5	№3,4	
	140198	多元统计分析 Multivariate Statistical Analysis	必 C	64				4.0	6	№3,4,5	
	<b>合 计</b> <b>Total</b>			必 C	752	16			46.5		
				选 E	选修课修读最低要求 学分 minimum elective course credits required:						



专业领域课 Specialty-related Courses	140060	数学模型 Mathematical Model	选 E	48				3.0	3	№4,5
	140177	面向对象程序设计 Object-oriented Programming	选 E	64	16			3.5	3	№3,4
	140221	矩阵计算 Matrix Computations	选 E	48				3.0	3	№3,4,5
	140039	离散数学 Discrete Mathematics	选 E	48				3.0	3	№3,4
	140111	宏观经济学 Macroeconomics	选 E	32				2.0	4	№3,4
	140335	管理学 Management	选 E	32				2.0	4	№3,4
	140134	数学软件与数学实验 Mathematics Software and Mathematics Experiments	选 E	48	32			2.0	4	№4
	140333	数学分析选讲 Selected Topics in Mathematical Analysis	选	32				2.0	4	№3,4
	140334	高等代数与解析几何选讲 Selected Topics in Advanced Algebra and Analytic Geometry	选	32				2.0	4	№3,4
	140125	数值分析 Numerical Analysis	选 E	64				4.0	4	№3,4
	140040	实变函数 Real Variable Function	必 C	64				4.0	4	№3,4
	140065	计算机网络 Computer Networks	选 E	48				3.0	4	№3,4
	140224	大数据应用 Big Data Application	选 E	32				2.0	5	№3,4
	140161	随机过程 Stochastic Process	选 E	64				4.0	5	№3,4
	140160	数理金融 Mathematical Finance	选 E	48				3.0	5	№3,4
	140056	操作系统 Operating Systems	选 E	64				4.0	5	№3,4
	140208	统计软件 Statistical Software	选 E	48	16			2.5	6	№4
	140200	现代时间序列分析 Modern Time Series Analysis	选 E	48				3.0	6	№3,4,5
	140211	数据挖掘与统计决策 Data Mining and Statistics Decision	选 E	64				4.0	6	№3,4
	140069	市场调查与预测 Market Research and Forecast	选 E	48				3.0	6	№3,4

140225	微分方程定性方法与数值模拟 Qualitative Methods and Numerical Simulation for Differential Equations	选 E	64	8			4.0	6	№3,4
140207	计量经济学 Econometrics	选 E	48				3.0	6	№3,4
140203	统计机器学习 Statistical Machine Learning	选 E	48				3.0	7	№3,4,5
140204	应用回归分析 Applied Regression Analysis	选 E	32				2.0	7	№3,4,5
140202	定性数据的统计分析 Qualitative Data Analysis	选 E	32				2.0	7	№3,4
120003	创新研究训练 Innovation Research Training	选 E	32				2.0		№5,8
120004	创新研究实践 I Innovation Research Practice 1	选 E	32				2.0		№5,8
120005	创新研究实践 II Innovation Research Practice 2	选 E	32				2.0		№5,8
120006	创业实践 Entrepreneurial Practice	选 E	32				2.0		№5,8
<b>合 计</b> <b>Total</b>		必 C							
		选 E	选修课修读最低要求 21.5 学分 minimum elective course credits required: 21.5						

备注：学生根据自己开展科研训练项目、学科竞赛、发表论文、获得专利和自主创业等情况申请折算为一定的专业选修课学分（创新研究训练、创新研究实践 I、创新研究实践 II、创业实践等创新创业课程）。每个学生累计申请为专业选修课总学分不超过 4 个学分。经学校批准认定为选修课学分的项目、竞赛等不再获得对应第二课堂的创新学分。

#### 四、集中实践教学环节(Practice-concentrated Training)

课程 代码 Course No	课程名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours		学分数 Credits	开课 学期 Semester	毕业要求 Student Outcomes
			实践 Practice weeks	授课 Lecture Hours			
106002	军训 Military Training	必 C	3 周		3.0	1	№7,8
143197	马克思主义理论与实践 Marxism Theory and Practice	必 C	2 周		2.0	假期	№2,8
140021	C++ 程序设计课程设计 C++ Programming (Course Project)	必 C	2 周		2.0	2	№4,8
140080	数据结构课程设计 Data Structures (Course Project)	必 C	2 周		2.0	3	№3,4
140179	面向对象程序设计课程设计 Object-oriented Programming (Course Project)	选 E	2 周		2.0	3	№3,4
140092	数学模型课程设计 Mathematical Modeling (Course Project)	选 E	2 周		2.0	3	№3,4
140089	数值分析课程设计 Numerical Analysis (Course Project)	选 E	2 周		2.0	4	№3,4
140331	数据库系统课程设计 Database Systems (Course Project)	必 C	3 周		3.0	4	№3,4

140229	大数据应用课程设计 Big Data Application (Course Project)	选 E	2 周		2.0	5	№4
140212	数据挖掘与统计决策课程设计 Data Mining and Statistics Decision (Course Project)	选 E	2 周		2.0	6	№3,4
140168	市场调查与预测课程设计 Market Research and Forecast (Course Project)	选 E	1 周		1.0	6	№3,4
140123	毕业实习 Graduation intern	必 C	5 周		5.0	8	№4,6
140124	毕业设计（论文） Graduation project	必 C	15 周		15.0	8	№5,6
<b>合 计</b> <b>Total</b>		必 C	32 周		32.0		
		选 E	选修课修读最低要求 4.0 学分 minimum elective course credits required:4				

## 五、第二课堂

第二课堂由人文素质教育和创新能力培养两部分组成。

### 1.人文素质教育基本要求

学生在取得专业教学计划规定学分的同时，还应结合自己的兴趣适当参加课外人文素质教育活动，参加活动的学分累计不少于 2 个学分。

### 2. 创新能力培养基本要求

学生在取得本专业教学计划规定学分的同时，还必须参加国家创新创业训练计划或广东省创新创业训练计划或 SRP（学生研究计划）或百步梯攀登计划或一定时间的各类课外创新能力培养活动（如学科竞赛、学术讲座等），参加活动的学分累计不少于 4 个学分。

## 5.“Second Classroom” Activities

“Second Classroom” Activities are comprised of two parts, Humanities Quality Education and Innovative Ability Cultivation.

### 1) Basic Requirements of Humanities Quality Education

Besides gaining course credits listed in one’s subject teaching curriculum, a student is required to participate in extracurricular activities of Humanities Quality Education based on one’s interest, acquiring no less than two credits.

### 2) Basic Requirements of Innovative Ability Cultivation

Besides gaining course credits listed in one’s subject teaching curriculum, a student is required to participate in any one of the following activities: National Undergraduate Training Programs for Innovation and Entrepreneurship, Guangdong Undergraduate Training Programs for Innovation and Entrepreneurship, Student Research Program (SRP), One-hundred-steps Innovative Program, or any other extracurricular activities of Innovative Ability Cultivation that last a certain period of time (e.g. subject contests, academic lectures), acquiring no less than four credits.