

宁波东方理工大学

2026 级大数据管理与应用本科专业培养方案

Curriculum for the Program of Big Data Management and Applications (2026)

Eastern Institute of Technology, Ningbo

一、专业介绍 Introduction to the Program

大数据管理与应用专业立足 AI+和大数据时代，积极响应国家“数字中国”战略及浙江省数字经济高质量发展需求。专业聚焦智能决策与数据管理，培养兼具数据科学、管理科学及行业应用知识的复合型领军人才。采用“1+3”通识与专业深度融合的培养模式，结合实践教学与 AI 辅助教学，全面提升学生自主创新能力与国际视野。课程体系涵盖数据分析、商务智能等核心领域，主要课程包括：大数据生态与存储计算，大数据治理与商业模式，数据挖掘及商务应用，深度学习原理与实践，数据统计与计量分析，数据智能与决策分析等。毕业生具备扎实的理论基础和丰富的实践技能，能够胜任数据分析师、AI 工程师、信息系统管理员、政府数据决策支持人员、金融风控分析师及咨询顾问等专业岗位。同时，学生具备竞争力，可赴国内外顶尖高校深造与研究。

The Big Data Management and Application program is designed for the AI and big data era, aligns with the national "Digital China" strategy and Zhejiang Province's demand for high-quality digital economic development. The program focuses on intelligent decision-making and data management, aiming to develop interdisciplinary, high-potential leaders proficient in data science, management science, and industry-specific knowledge.

Adopting a "1+3" model that deeply integrates general education and specialized training in depth, the program combines practical teaching with AI-assisted instruction to systematically enhance students' capacity for innovation and global awareness. The curriculum covers core areas such as data analysis and business intelligence, with key courses including Big Data Ecosystem and Storage Computing, Big Data Governance and Business Models, Data Mining and Business Applications, Principles and Practice of Deep Learning, Statistics and Econometrics, and Data Intelligence and Decision Analysis.

Graduates possess a solid theoretical foundation and extensive practical experience, qualifying them for professional roles such as data analysts, AI engineers, information systems managers, government data decision support specialists, financial risk control analysts, and consultants. Additionally, students are competitive candidates for further study and research at leading research universities.

二、培养目标 Program Objective

本专业立足数字经济发展与产业智能化转型，面向数字中国建设和新一代信息技术产业发展需求，培养德智体美劳全面发展，系统掌握管理学、数据科学与大数据管理等核心理论以及人工智能驱动的数据分析、数据治理与智能决策等前沿知识，具备数据获取与处理、数据分析与决策支持、数据治理与价值创造等关键能力，具有良好职业伦理、数据安全与社会责任意识，以及跨界协同和持续创

新精神的复合型高素质专门人才。毕业生能够在互联网、金融科技、智能制造、现代服务业和公共管理等领域，从事数据分析、数据产品设计、数据治理、智能决策与数字化转型等工作，预期毕业 5 年左右成长为业务与技术深度融合的行业骨干、数据驱动的管理人才或具有创新引领能力的数字化转型先锋。毕业生在毕业后五年内，预期达到以下目标：

The program is grounded in the development of the digital economy and the intelligent transformation of industries, and responds to the needs of the Digital China initiative and the growth of next-generation information technology industries. It aims to cultivate well-rounded, high-caliber interdisciplinary professionals who possess a systematic understanding of core theories in management, data science, and big data management, as well as frontier knowledge in AI-driven data analytics, data governance, and intelligent decision-making. Graduates will develop key competencies in data acquisition and processing, data analysis and decision support, and data governance and value creation, together with strong professional ethics, awareness of data security and social responsibility, and a spirit of cross-disciplinary collaboration and continuous innovation. Graduates will be prepared to work in fields such as the Internet industry, financial technology, intelligent manufacturing, modern services, and public administration, undertaking roles in data analysis, data product design, data governance, intelligent decision-making, and digital transformation. Within approximately five years after graduation, they are expected to develop into industry professionals who integrate business and technology, data-driven managers, or digital transformation leaders with strong innovation capabilities. Graduates are expected to achieve the following goals within approximately five years after graduation:

1.家国情怀与国际视野：拥有坚定的家国情怀和全球化视野，具备良好的职业道德、社会责任感、领导力。面对挑战与挫折保持坚韧不拔的精神，持续追求卓越与创新。

Demonstrate a strong sense of social responsibility and national commitment; demonstrate good professional ethics, social responsibility, and leadership; maintain resilience and perseverance in the face of challenges and setbacks; and continuously pursue excellence and innovation.

2.扎实的专业知识与技能：掌握自然科学、大数据应用、管理学与经济学的理论基础，熟悉信息技术与工程相关知识，具备系统化的管理思想和较高的管理素质，能够熟练运用量化分析工具和商业应用软件，具备扎实的理论、定量研究及实践操作能力，同时具备创新创业的潜力和能力。

Master fundamental theories in natural sciences, big data applications, management, and economics; possess comprehensive knowledge of information technology and engineering-related disciplines; develop systematic management thinking and strong managerial competence; demonstrate proficiency in quantitative analysis tools and business software; acquire solid theoretical foundations alongside quantitative analysis and practical application skills; and exhibit strong potential for innovation and entrepreneurial endeavors.

3.综合素质与能力：具备批判性思维和创造性解决问题的能力，理解并践行工程理念，拥有较强的适应能力。具备良好的表达与沟通技巧，能够有效开展团队合作，具备终身学习的意识和能力，持续提升专业水平和综合素养。

Exhibit critical thinking and creative problem-solving skills; understand and apply engineering principles; possess strong adaptability; communicate effectively both orally and in writing; work well in teams; and maintain a lifelong learning mindset, with the ability to continuously improve professional competence and overall capability.

三、培养要求 Graduate Competencies

1.素养要求：毕业生应拥有良好的思想政治素质和正确的人生观、价值观；具有较强的法律意识和高度的社会责任感，恪守职业道德，具备良好的团队合作精神和适应能力；具备科学精神与人文素养，培养创新意识和创业精神，保持健康的心理素质和良好的身体素质。

Qualities Requirements: Graduates should possess strong ethical, civic, and social responsibility awareness, as well as sound values and judgment. They should have a solid understanding of legal and regulatory frameworks, adhere to professional ethics, and demonstrate effective teamwork skills and social adaptability. They are expected to embody scientific rigor and humanistic awareness, foster innovation and an entrepreneurial mindset, and maintain sound physical and psychological well-being.

2.知识要求：毕业生应系统掌握管理科学与工程类专业的基本理论和核心知识，熟悉相关的信息技术与工程技术，了解自然科学、社会科学及人文学科的基础知识，形成科学合理的知识结构；掌握大数据环境下的数据处理和分析方法、精通数智化商务的管理科学专业知识，熟练运用商务数据建模与智能决策分析的技术、方法和工具。

Knowledge Requirements: Graduates should systematically master the fundamental theories and core knowledge of Management Science and Engineering, be familiar with relevant information technology and engineering-related knowledge, and understand fundamental concepts in natural sciences, social sciences, and humanities, thereby forming a coherent and well-structured knowledge system. They should master data processing and analytical methods in big data environments, be proficient in management science in data-driven and intelligent business contexts, and effectively apply techniques, methods, and tools for business data modeling and intelligent decision-making.

3.能力要求：毕业生应具备自主学习和持续更新管理科学与工程类专业相关知识的能力，具备将所学知识综合应用于实践的能力；拥有较强的逻辑思维能力、口头与书面表达能力、人际沟通与组织协调能力，具备运用专业外语的能力；能够综合运用管理科学、信息技术和工程方法，解决复杂管理问题；具备大数据管理与应用领域的创新创业能力，能够利用大数据技术和软件工具为企业事业及政府部门开展商业分析、量化管理和辅助决策提供有效支撑。

Ability Requirements: Graduates should demonstrate the capacity for self-directed learning and continuous knowledge updating in Management Science and Engineering, as well as the ability to apply interdisciplinary knowledge in practice. They should possess strong logical reasoning, oral and written communication, interpersonal, and organizational skills, along with proficiency in professional English

(or other relevant foreign languages). Graduates must be able to integrate management science, information technology, and engineering approaches to address complex management problems. They should demonstrate innovation and entrepreneurial capabilities in big data management and applications, be able to effectively use big data technologies and software tools to support business analysis, quantitative management, and decision-making in enterprises, public institutions, and government agencies.

四、培养特色 Program Highlights

人工智能（AI）时代背景下，本专业结合实践教学与 AI 辅助教学，培养学生的自主学习、知识融通与实践创新能力；顺应经济社会的发展趋势，突出系统化管理思想，培养具有思辨能力及国际化视野的拔尖创新人才。具体培养特色包括：

In the era of artificial intelligence (AI), this program integrates hands-on practice with AI-assisted teaching to foster students' abilities in self-directed learning, interdisciplinary knowledge integration, and innovative practice. In alignment with the evolving economic and societal trends, the program emphasizes systematic management thinking and aims to cultivate high-level innovative talents with critical thinking skills and a global perspective. Key features of the program include:

1.强化通识教育：全校课程设置采用“1+3”模式，第一学年不分专业，在强化数理化基础和计算能力的同时，强化科技教育与人文教育协同，提高学生创新意识，提升写作与沟通能力；学生在第二学期末开始选择专业，之后进入为期两年的专业培养；第四学年在专业选修课的同时，进行创新实践与毕业设计。

Emphasis on General Education: The university adopts a ‘1+3’ curriculum structure: during the first academic year, students are not assigned to a specific major, enabling them to build a strong foundation in mathematics, physics, chemistry, and computational thinking. The program emphasizes the integration of science, technology, and humanities education to enhance innovation awareness and improve writing and communication skills. Students choose their majors at the end of the second semester, after which they enter two years of specialized training. In the fourth year, students complete innovation practice and a capstone (graduation) project while taking major electives.

2.书院制培养：实行书院制和导师制，开展全员、全过程、全方位育人，致力于培养学生的表达与沟通能力、团队协作能力、领导力等综合素质。

Residential College Model: A residential college and mentorship system is in place to support holistic, full-process student development. This model aims to cultivate students' communication, teamwork, and leadership skills, as well as their overall personal and professional development.

3.本研贯通：实行学术导师制，强化科研与创新能力培养；鼓励学生及早参与科研创新活动，融合为期一年的本科“创新实践与毕业设计”与科研课题，为学生进入国内外大学攻读硕、博研究生学位提前做好准备，加速急需拔尖人才培养。

Integrated Undergraduate - Graduate Pathways: An academic advisory system is implemented to strengthen research and innovation capacity development. Students are encouraged to participate in research projects early on, with the year-long “Innovation Practice and Graduation Project” integrated with ongoing research initiatives. This approach prepares students for postgraduate study (master's and

doctoral programs) at leading universities in China and abroad, and accelerates the cultivation of high-level, in-demand innovative talent.

4.加强科教实践：促进产教融合，设置夏季学期实践必修课程，鼓励参与夏季学期科研，系统化支持学生进入科研机构、企事业单位等，参与以实践项目为驱动的全过程人才培养。

Enhanced Scientific and Industrial Practice: To promote the integration of education, research, and industry, compulsory summer practice modules are offered. Students are encouraged to participate in summer research activities and are systematically supported in engaging with research institutes, enterprises, and public organizations through project-based practice-driven training.

5.国际化培养：发挥国际化师资优势，专业课实行双语教学，支持学生赴世界一流大学与机构参与国际交流、项目合作，拓宽视野，提升国际竞争力。

Global Competence Development: Leveraging an internationally oriented faculty, the program incorporates bilingual instruction in core courses and supports student participation in international exchanges and collaborative projects at world-class universities and institutions, thereby broadening their horizons and enhancing global competitiveness.

6.智能化教育：探索 AI 时代的教学变革，利用智能工具提高知识传授与学习效率；开设人工智能通识课，培养学生利用数字资源和智能工具的自主学习能力。

AI for Education: Explore pedagogical innovation in the AI era by leveraging intelligent tools to enhance teaching and learning efficiency. The program offers introductory AI courses to develop students' ability to use digital resources and AI tools for self-directed learning.

五、学制和授予学位 Program Duration and Degree Awarded

专业学制：基本学制4年，采用学分制管理，实行弹性学习年限，最多不超过6年。

授予学位：对完成并符合培养方案学位要求的学生，授予管理学学士学位。

Program Duration: The standard duration of the program is four years. A credit-based management system is adopted, with maximum 6 years of study.

Degree Awarded: Students who have completed the program and met the degree requirements stipulated in this Educational Program will be awarded the Bachelor of Management degree.

六、毕业学分要求 Credit Requirements for Graduation

毕业最低学分要求为 158 学分。课程结构要求如下：

A minimum of 158 credits is required for graduation. The curriculum structure is as follows:

课程模块 Module	课程要求 Requirement	课程类别 Category	学分 Credits
通识与基础课程	必修	公共通识必修课	41

General Education and Foundational Module (81学分/Credits)	Required	General Education Required Courses	
		理工基础课 Fundamental Science and Engineering Courses	32
	选修 Elective	通识选修课 General Education Elective Courses	8
专业课程 Major-specific Module (57学分/Credits)	必修 Required	学科基础课程 Discipline-specific Foundational Module	24
	必修 Required	专业核心课 Major Core Courses	18
	选修 Elective	专业选修课 Major Elective Courses	15
集中实践环节 Intensive Practical Training Module (20学分/Credits)	必修 Required	夏季学期实践 Internship	12 (24周/Weeks)
		创新实践与毕业设计 Capstone Project	8 (32周/Weeks)
毕业学分要求 Graduation Credits Requirement			158

基于国标要求的各指标如下：Credit Distribution Against National Standard Requirements

课程类别 Category	学分 Credits	所占比列 Percentage (%)	国标要求 National Standard (%)
实践及创新创业类课程 Applied Practice Courses	48.5	30.7%	≥20%
注：上表中，实践性环节学分未包含专业选修课实践学分。 The credit for the practical training module excludes practical credits from major elective courses.			

七、主要课程设置 Core Courses

商业数据结构与算法，Python 程序设计基础，管理统计学，数据库技术，大数据技术基础，大数据计量经济分析，数据挖掘与机器学习，大数据治理，大数据智能分析理论与方法，数据驱动的管理方法与应用等。

Business Data Structures and Algorithms, Fundamentals of Python Programming, Business Statistics, Database System, Foundations of Big Data Technologies, Big Data Econometric Analysis, Data Mining and Machine Learning, Big Data Governance, Theories and Methods of Data Intelligence Analysis, Data-driven Management Methods and Applications, etc.

八、主要实践性教学环节和主要专业实验

Practical Training Activities and Major Experiments

主要实践性教学环节包括：夏季学期认知实践、专业实践和创新实践，第四学年全年创新实践与毕业设计，以及各类国内外本科生学术竞赛、创新大赛等。另外，本科生入学即可选择学术导师团队，及早参与科研，期间可以选择与夏季学期实践、第四学年创新项目相融合。

Practical Training Components: Cognitive practice (introductory field exposure)

in the summer term, professional practice, and innovation-oriented practice; a year-long innovation practice and capstone (graduation) project in the fourth year; as well as participation in various domestic and international undergraduate academic competitions and innovation contests. In addition, students are assigned to academic advisor teams upon enrollment and are encouraged to engage in research at an early stage, with the option to integrate their research with summer-term practice and fourth-year innovation projects.

主要专业实验包括：所有专业必修课程的实验课以及专业选修课程的实验课。详细内容请参见附表一。

Core Laboratory Components: These include laboratory sessions associated with all required major courses as well as laboratory components of elective courses. For details, please refer to Appendix Table 1.

九、课程设置与要求 Course Structure and Requirements

(一) 通识与基础课程 General Education and Foundational Module

1. 公共通识必修课程 General Education Required Courses

(1) 思想政治理论课 Ideological and Political Theory Courses

课程代码 Course Code	课程名称 Course Name	必修选修 Required/ Elective	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
GENE1101	思想道德与法治 Ethics and Rule of Law	必 Required	3	1	3	无 None	1/秋 Y1/Fall
GENE1102	马克思主义基本原理 Basic Principles of Marxism	必 Required	3	1	3	无 None	1/春 Y1/Spring
GENE2101	中国近现代史纲要 Modern Chinese History: A Survey	必 Required	3	1	3	无 None	2/秋 Y2/Fall
GENE2102	毛泽东思想和中国特色社会 主义理论体系概论 Introduction to Maoism and Chinese Socialism	必 Required	2		2	无 None	2/春 Y2/Spring
GENE3101	习近平新时代中国特色社会主义思想概论 Introduction to Xi Thought on Chinese Socialism	必 Required	3	1	3	无 None	3/秋 Y3/Fall
GENE1103	形势与政策I Society and Public Policy in Contemporary China I	必 Required	0.5		0.5	无 None	1/秋 Y1/Fall
GENE1104	形势与政策II Society and Public Policy in Contemporary China II	必 Required	0.5		0.5	无 None	1/春 Y1/Spring
GENE2103	形势与政策III Society and Public Policy in Contemporary China III	必 Required	0.5		0.5	无 None	2/秋 Y2/Fall
GENE2104	形势与政策IV Society and Public Policy in Contemporary China IV	必 Required	0.5		0.5	无 None	2/春 Y2/Spring
GENE3301	思想政治理论课实践 Political Theory and Ideology: Experiential Learning	必 Required	2	2	2	无 None	3/秋 Y3/Fall
GENE3302	劳动教育实践 Practical Labor Education	必 Required	1	1	2	无 None	*
小计/Subtotal			19	7	20		
*具体见通识培养方案 For details, please refer to the Curriculum for General Education.							

(2) 军事体育健康课 Military, Physical Education and Health Courses

课程代码 Course Code	课程名称 Course Name	必修选修 Required/ Elective	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
GENE1001	军事技能训练 Military Skills Training	必 Required	2	2		无 None	夏 Summer
GENE1002	军事理论与国家安全教育 Military Theory	必 Required	3			无 None	夏 Summer
GENE1401	体育与健康I Physical Education I	必 Required	0.5	0.5	2	无 None	1/秋 Y1/Fall
GENE1402	体育与健康II Physical Education II	必 Required	0.5	0.5	2	无 None	1/春 Y1/Spring
GENE2401	体育与健康III Physical Education III	必 Required	0.5	0.5	2	无 None	2/秋 Y2/Fall
GENE2402	体育与健康IV Physical Education IV	必 Required	0.5	0.5	2	无 None	2/春 Y2/Spring
GENE3401	体育与健康V Physical Education V	必 Required	0.5	0.5	2	无 None	3/秋 Y3/Fall
GENE3402	体育与健康VI Physical Education VI	必 Required	0.5	0.5	2	无 None	3/春 Y3/Spring
小计/Subtotal			8	5	12		

(3) 语言和沟通技能提升课 Language and Communication Skills Courses

英语实行 ABC 三级分级教学，根据不同等级要求，总计修满 12 学分。

The English curriculum follows a three-tier A, B, and C level system. Students are required to complete a total of 12 credits according to their assigned level.

课程代码 Course Code	课程名称 Course Name	必修选修 Required / Elective	要求 Requirements	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
LC1501	大学英语I-A General Academic English I-A	必 Required	A级修读 Required for Level A	3		4	无 None	1/秋 Y1/Fall
LC1502	大学英语II-A General Academic English II-A	必 Required		3		4	LC1501	1/春 Y1/Spring
LC2501	大学英语III-A General Academic English III-A	必 Required		3		4	LC1502	2/秋 Y2/Fall
LC1503	大学英语I-B General Academic English I-B	必 Required	B级修读 Required for Level B	3		4	无 None	1/秋 Y1/Fall
LC1504	大学英语II-B General Academic English II-B	必 Required		3		4	LC1503	1/春 Y1/Spring
LC2502	大学英语III-B General Academic English III-B	必 Required		3		4	LC1504	2/秋 Y2/Fall
LC1505	大学英语I-C General Academic English I-C	必 Required	C级修读 Required for Level C	3		4	无 None	1/秋 Y1/Fall
LC1506	大学英语II-C General Academic English II-C	必 Required		3		4	LC1505	1/春 Y1/Spring
LC2503	大学英语III-C General Academic English III-C	必 Required		3		4	LC1506	2/秋 Y2/Fall
LC2504	学术英语写作与交流 Academic Writing and Presentation	必 Required	所有学生修读 Required for All Levels (A, B, C)	3		4	LC2501/ LC2502/ LC2503	2/春 Y2/Spring
小计/Subtotal				30		40		

其他沟通技能提升课程要求如下：Other requirements:

课程代码 Course Code	课程名称 Course Name	必修选修 Required/ Elective	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
GENE2301	沟通与协作 Communication and Collaboration	必 Required	2		2	无 None	2/秋 Y2/Fall
小计/Subtotal			2		2		

2. 理工基础课 Fundamental Science and Engineering Courses

课程代码 Course Code	课程名称 Course Name	必修选修 Required/ Elective	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
MATH1101	高等数学I Calculus I	必 Required	4		5	无 None	1/秋 Y1/Fall
MATH1102	高等数学II Calculus II	必 Required	4		5	MATH1101	1/春 Y1/Spring
MATH1103	线性代数 Linear Algebra	必 Required	3		4	无 None	1/秋 Y1/Fall
MATH2101	概率论与数理统计 Probability Theory and Mathematical Statistics	必 Required	3		3	MATH1102	2/秋 Y2/Fall
PHYS1101	大学物理I General Physics I	必 Required	4		4	无 None	1/秋 Y1/Fall
PHYS1102	大学物理II General Physics II	必 Required	4		4	PHYS1101	1/春 Y1/Spring
PHYS1301	大学物理实验I General Physics Experiments I	必 Required	1	1	1	无 None	1/秋 Y1/Fall
PHYS1302	大学物理实验II General Physics Experiments II	必 Required	1	1	1	PHYS1301	1/春 Y1/Spring
CHEM1101	大学化学 General Chemistry	必 Required	3	1	3	无 None	1/春 Y1/Spring
CS1001	人工智能通识 Introduction to AI	必 Required	2	1	2	无 None	1/秋 Y1/Fall
CS1101	Python程序设计基础 Fundamentals of Python Programming	必 Required	3	1	3	无 None	1/春 Y1/Spring
小计/Subtotal			32	5	35		

3. 通识选修课程修读要求 Requirements for General Education Elective Courses

下列类型课程有最低学分修读要求

The following types of courses have a minimum credit requirement.

课程类型 Course Type	必修选修 Required/ Elective	最低学分 要求 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	推荐修读学期 Recommended Term
人文社科类通识课 Humanity and Social Science	选 Elective	2		2		2/秋 Y2/Fall
艺术类通识课 Arts	选 Elective	2		2		2/春 Y2/Spring
创新创业类通识课 Entrepreneurship	选 Elective	2	0.5	2		3/秋 Y3/Fall
其他通识课 Others	选 Elective	2		2		3/春 Y3/Spring
小计/Subtotal		8	0.5	8		

(二) 专业课程 Major-specific Module

1. 学科基础课程 Discipline-specific Foundational Module

课程代码 Course Code	课程名称 Course Name	必修选修 Required / Elective	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
MGMT2001	经济学导论 Principles of Economics	必 Required	3		3	无 None	2/秋 Y2/Fall
MGMT2002	管理学导论 Principles of Management	必 Required	3		3	无 None	2/秋 Y2/Fall
MGMT2101	管理信息系统 Management Information Systems	必 Required	3	1	3	CS1101	2/秋 Y2/Fall
MGMT2201*	商业数据结构与算法 Business Data Structures and Algorithms	必 Required	3	1	3	CS1101	2/秋 Y2/Fall
MGMT2102*	运筹学 Operations Research	必 Required	3	1	3	无 None	2/春 Y2/Spring
MGMT2103	管理统计学 Business Statistics	必 Required	3	1	3	MATH2101	2/春 Y2/Spring
MGMT2104	数字化战略与创新 Digital Strategy and Innovation	必 Required	3		3	无 None	2/春 Y2/Spring
MGMT2105*	数据库技术 Database Systems	必 Required	3	1	3	MGMT2201*	2/春 Y2/Spring
小计/Subtotal			24	5	24		

*注: MGMT2201 可用 CS2201 数据结构与算法替代, MGMT2102 可用 MATH2502 最优化方法替代, MGMT2105 可用 CS3202 数据库原理替代。

Note: MGMT2201 may be substituted with CS2201 Data Structures and Algorithms; MGMT2102 may be substituted with MATH2502 Optimization; MGMT2105 may be substituted with CS3202 Database System Fundamentals.

2. 专业核心课 Major Core Courses

课程代码 Course Code	课程名称 Course Name	必修选修 Required / Elective	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
MGMT2202*	大数据技术基础 Foundations of Big Data Technologies	必 Required	3	1	3	MGMT2201*	2/春 Y2/Spring
MGMT3201	大数据计量经济分析 Big Data Econometric Analysis	必 Required	3	1	3	MGMT2103	3/秋 Y3/Fall
MGMT3202*	数据挖掘与机器学习 Data Mining and Machine Learning	必 Required	3	1	3	MGMT2101 MGMT2105*	3/秋 Y3/Fall
MGMT3203	大数据治理 Big Data Governance	必 Required	3	1	3	MGMT2101 MGMT2105*	3/秋 Y3/Fall
MGMT3204	大数据智能分析理论与方法 Theories and Methods of Data Intelligence Analysis	必 Required	3	1	3	MGMT3202*	3/春 Y3/Spring
MGMT3301	数据驱动的管理方法与应用 Data-driven Management Methods and Applications	必 Required	3	1	3	MGMT3201 MGMT3202*	3/春 Y3/Spring
小计/Subtotal			18	6	18		

*注: MGMT2202 可用 CS3504 大数据技术替代, MGMT3202 可用 CS2001 人工智能导论替代。

Note: MGMT2202 may be substituted with CS3504 Big Data; MGMT3202 may be substituted with CS2001 Artificial Intelligence - An Overview.

3. 专业选修课 (至少修读 15 学分, 可自主修读)

Major Elective Courses (A minimum of 15 credits must be completed. Students may choose courses freely.)

课程代码 Course Code	课程名称 Course Name	必修选修 Required / Elective	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
MGMT1001	商业分析导论 Introduction to Business Analysis	选 Elective	1		1	无 None	1/春 Y1/Spring
MGMT2003	数据伦理 Data Ethics	选 Elective	2	1	2	无 None	2/秋 Y2/Fall
CS2204	计算机网络 Computer Networks	选 Elective	3	1	3	CS2201	2/春 Y2/Spring
MGMT2601	社交网络模型及商业应用 Social Network Models and Business Applications	选 Elective	2	1	2	无 None	2/春 Y2/Spring
MGMT3501	经济管理中的实证方法 Empirical Methods for Economics and Management	选 Elective	3	1	3	MGMT2103	3/秋 Y3/Fall
MGMT3601	运营管理 Operations Management	选 Elective	3	1	3	MGMT2102*	3/秋 Y3/Fall
MGMT3602	大数据管理与ERP Big Data Management and ERP	选 Elective	3	1	3	MGMT2101 MGMT2105*	3/秋 Y3/Spring
MGMT3603*	深度学习原理与实践 Fundamentals and Methods of Deep Learning	选 Elective	3	1	3	MGMT3201 MGMT3202*	3/春 Y3/Spring
CS3205	智能机器人 Intelligent Robots	选 Elective	3	1	3	CS2001	3/春 Y3/Spring
MGMT3605	区块链基础与应用 Fundamentals and Applications of Blockchain	选 Elective	3	1	3	无 None	3/秋 Y3/Fall
MATH2501	数学建模 Mathematical Modeling	选 Elective	2		2	MATH1102 MATH1103	3/秋 Y3/Fall
CS3507	自然语言处理 Natural Language Processing	选 Elective	3	1	3	CS2001	3/春 Y3/Spring
MGMT3607	非结构化数据分析 与商业应用 Unstructured Data Analytics and Business Applications	选 Elective	3	1	3	MGMT3202*	3/春 Y3/Spring
MGMT4601	供应链管理 Supply Chain Management	选 Elective	3	1	3	MGMT2102*	4/秋 Y4/Fall
MGMT4602	金融大数据分析 Financial Big Data Analytics	选 Elective	2	1	2	MGMT3201	4/秋 Y4/Fall
MGMT4603	时间序列分析 Time Series Analysis	选 Elective	3	1	3	MGMT3201	4/秋 Y4/Fall
EE3602	自动控制原理 Principles of Automatic Control	选 Elective	3	1	3	MATH1102	4/秋 Y4/Fall
小计/Subtotal			46	16	46		

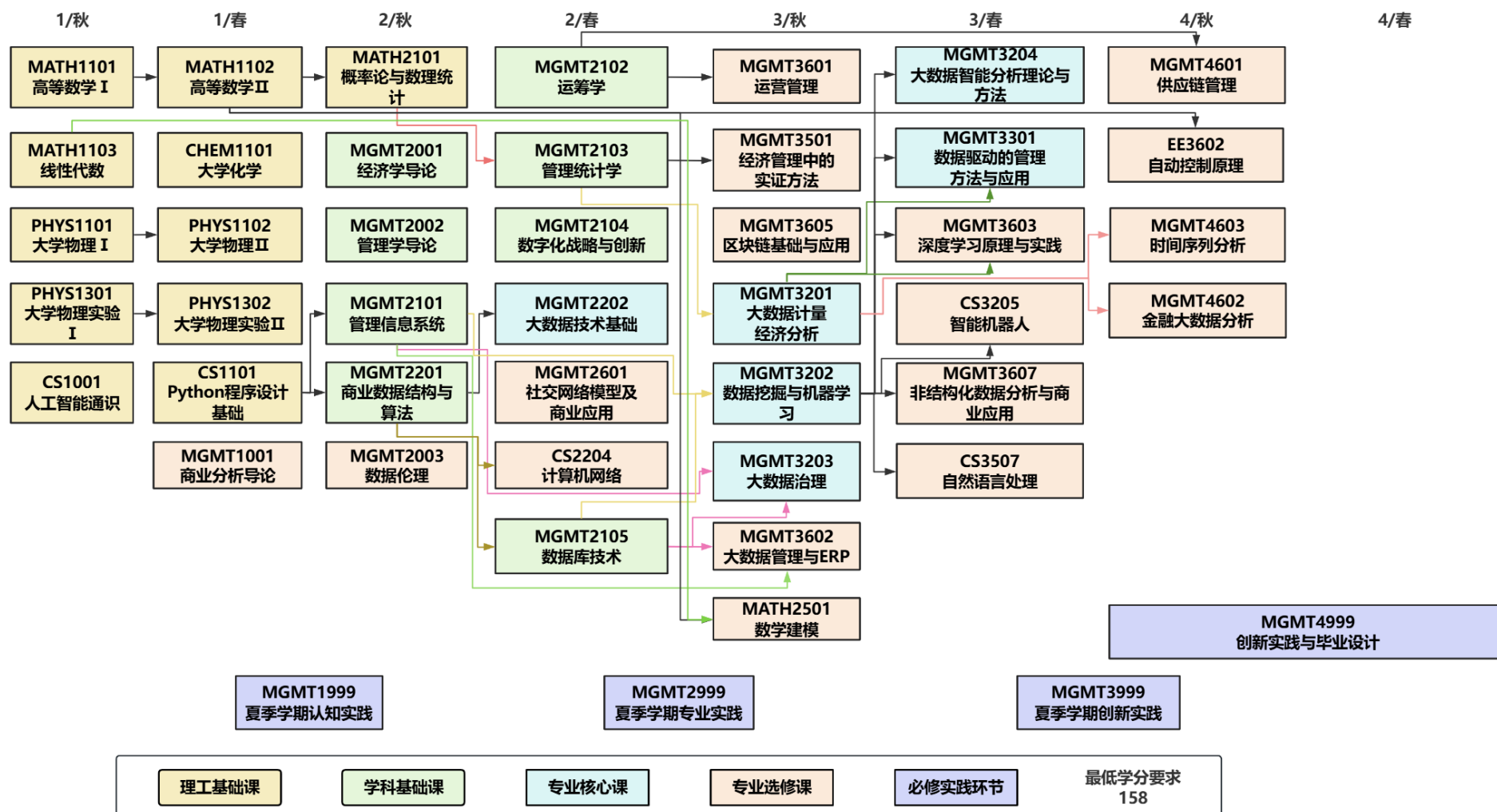
*注：MGMT3603 可用 CS3206 深度学习替代。

Note: MGMT3603 may be substituted with CS3206 Deep Learning.

(三) 集中实践环节 Intensive Practical Training Module

课程代码 Course Code	课程名称 Course Name	必修选修 Required/ Elective	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
MGMT1999	认知实践 Summer Internship I	必 Required	4	4	8 周/ Weeks	无 None	1/夏 Y1/Summer
MGMT2999	专业实践 Summer Internship II	必 Required	4	4	8 周/ Weeks	无 None	2/夏 Y2/Summer
MGMT3999	创新实践 Summer Internship III	必 Required	4	4	8 周/ Weeks	无 None	3/夏 Y3/Summer
MGMT4999	创新实践与毕业设计 Capstone Project	必 Required	8	8	32 周/ Weeks	无 None	4/秋-4/春 Y4/Fall- Y4/Spring
小计/Subtotal			20	20	56 周/ Weeks		

十、专业课程关联图 Roadmap for Major Courses



附表一：主要专业实验和集中实践性环节

Appendix Table 1: Major Experiments and Intensive Practical Training Activities

课程代码 Course Code	课程名称 Course Name	必修选修 Required / Elective	总学分 Credits	实践学分 Practical Credits	周学时 Weekly Load	先修课程 Prerequisites	学期 Term
MGMT2101	管理信息系统 Management Information Systems	必 Required	3	1	3	CS1101	2/秋 Y2/Fall
MGMT2201	商业数据结构与算法 Business Data Structures and Algorithms	必 Required	3	1	3	CS1101	2/秋 Y2/Fall
MGMT2102	运筹学 Operations Research	必 Required	3	1	3	无 None	2/春 Y2/Spring
MGMT2103	管理统计学 Business Statistics	必 Required	3	1	3	MATH2101	2/春 Y2/Spring
MGMT2105	数据库技术 Database Systems	必 Required	3	1	3	MGMT2201	2/春 Y2/Spring
MGMT2202	大数据技术基础 Foundations of Big Data Technologies	必 Required	3	1	3	MGMT2201	2/春 Y2/Spring
MGMT3201	大数据计量经济分析 Big Data Econometric Analysis	必 Required	3	1	3	MGMT2103	3/秋 Y3/Fall
MGMT3202	数据挖掘与机器学习 Data Mining and Machine Learning	必 Required	3	1	3	MGMT2101 MGMT2105	3/秋 Y3/Fall
MGMT3203	大数据治理 Big Data Governance	必 Required	3	1	3	MGMT2101 MGMT2105	3/秋 Y3/Fall
MGMT3204	大数据智能分析理论与方法 Theories and Methods of Data Intelligence Analysis	必 Required	3	1	3	MGMT3202	3/春 Y3/Spring
MGMT3301	数据驱动的管理方法与应用 Data-driven Management Methods and Applications	必 Required	3	1	3	MGMT3201 MGMT3202	3/春 Y3/Spring
MGMT2003	数据伦理 Data Ethics	选 Elective	2	1	2	无 None	2/秋 Y2/Fall
CS2204	计算机网络 Computer Networks	选 Elective	3	1	3	CS2201	2/春 Y2/Spring
MGMT2601	社交网络模型及商业应用 Social Network Models and Business Applications	选 Elective	2	1	2	无 None	2/春 Y2/Spring
MGMT3501	经济管理中的实证方法 Empirical Methods for Economics and Management	选 Elective	3	1	3	MGMT2103	3/秋 Y3/Fall
MGMT3601	运营管理 Operations Management	选 Elective	3	1	3	MGMT2102*	3/秋 Y3/Fall
MGMT3602	大数据管理与ERP Big Data Management and ERP	选 Elective	3	1	3	MGMT2101 MGMT2105*	3/秋 Y3/Spring
MGMT3603*	深度学习原理与实践 Fundamentals and Methods of Deep Learning	选 Elective	3	1	3	MGMT3201 MGMT3202*	3/春 Y3/Spring
CS3205	智能机器人 Intelligent Robots	选 Elective	3	1	3	CS2001	3/春 Y3/Spring
MGMT3605	区块链基础与应用 Fundamentals and Applications of Blockchain	选 Elective	3	1	3	无 None	3/秋 Y3/Fall
CS3507	自然语言处理 Natural Language Processing	选 Elective	3	1	3	CS2001	3/春 Y3/Spring
MGMT3607	非结构化数据分析 与商业应用 Unstructured Data Analytics and Business Applications	选 Elective	3	1	3	MGMT3202*	3/春 Y3/Spring
MGMT4601	供应链管理 Supply Chain Management	选 Elective	3	1	3	MGMT2102*	4/秋 Y4/Fall
MGMT4602	金融大数据分析 Financial Big Data Analytics	选 Elective	2	1	2	MGMT3201	4/秋 Y4/Fall
MGMT4603	时间序列分析 Time Series Analysis	选 Elective	3	1	3	MGMT3201	4/秋 Y4/Fall
EE3602	自动控制原理 Principles of Automatic Control	选 Elective	3	1	3	MATH1102	4/秋 Y4/Fall

MGMT1999	认知实践 Summer Internship I	必 Required	4	4	8 周/ Weeks	无 None	1/夏 Y1/Summer
MGMT2999	专业实践 Summer Internship II	必 Required	4	4	8 周/ Weeks	无 None	2/夏 Y2/Summer
MGMT3999	创新实践 Summer Internship III	必 Required	4	4	8 周/ Weeks	无 None	3/夏 Y3/Summer
MGMT4999	创新实践与毕业设计 Capstone Project	必 Required	8	8	32 周/ Weeks	无 None	4/秋-4/春 Y4/Fall- Y4/Spring
小计/Subtotal			95	46	75+56 周/ Weeks		