

# Master of Engineering Management

## 工程管理硕士

(125600)

### 1. Overview of the Program (学科简介与研究方向)

Master of Engineering Management (MEM) Program is a professional master degree program established by the State Council Academic Degrees Committee for meeting the needs of modern engineering practice. Engineering management means planning, organizing, directing, coordinating, controlling, and decision-making scientifically for modern engineering practice, including technical and economic argumentation and decision-making of major engineering construction projects; management of key industries and their new products, facilities and equipment in the process of development, manufacturing and production; management of technological innovation, technological transformation, transition, and international integration; research and management of major layout and development strategy on the field of industry, engineering and technology.

Beijing Institute of Technology (BIT) is one of the first batch of training institutions of MEM program authorized by the State Council Academic Degrees Committee, and also one of the first batch of 25 training institutions approved to carry out the cooperation qualification of MEM and IPMP certification in China. MEM program in BIT offers the training for four professional fields, including energy and carbon neutral management, project management, big data and information engineering management, equipment engineering management.

工程管理专业硕士 (Master of Engineering Management, 简称 MEM) 是因现代工程实践的需要而由国务院学位委员会设立的研究生专业学位。工程管理针对现代工程实践进行科学地计划、组织、指挥、协调、控制、决策等, 包括: 重大建设工程项目的技术经济论证和决策, 重点产业及其新产品、设备、装备在开发、制造、生产过程中的管理; 技术创新、技术改造、转型、与国际接轨的管理; 产业、工程和科技的重大布局与发展战略的研究与管理等。

北京理工大学是国务院学位委员会第一批授权的工程管理硕士培养单位, 也是全国首批获准开展 MEM 与 IPMP 认证合作资格的 25 所培养单位之一。我校工程管理硕士主要分为四个专业领域, 包括能源与碳中和管理、项目管理、大数据与信息工程管理、装备工程管理。

### 2. Training Target (培养目标)

The MEM program of BIT devotes to cultivating students' professional quality of benefiting the people and society with sincerity and honesty and behaving according to morality and law. Also, we devote to training high-level talents with good political accomplishment and professional ethics, strong career-ambition and sense of

social responsibility, who have a good knowledge of systematic engineering management theory and expertise, and the ability of planning, organizing, directing, coordinating, controlling and decision-making, and can independently undertake the engineering management work. With the ability of understanding Chinese and foreign cultures, so that to bring international graduate students into full play as a cultural bridge.

培养目标是培育学生经世济民、诚信服务、德法兼修的职业素养；培养具备良好的政治素质和职业道德，具有强烈的事业心和社会责任感，掌握系统的工程管理理论和专门知识，具有计划、组织、指挥、协调、控制和决策能力，能够独立担负工程管理工作的高层次人才。同时，应了解中外文化，能够充分发挥留学生的文化桥梁作用。

### **3. Length of Schooling (学制)**

The basic length of schooling for MEM students is 2 years. In principle, students should complete the courses in the first academic year. Thesis work time should not be less than one year. The maximum length of study for MEM students is extended by 0.5 years on the basis of 2 years.

MEM 留学生的基本学制为 2 年。原则上，学生应在第一学年完成课程。论文工作时间不得少于一年。MEM 留学生的最长学习年限在 2 年的基础上延长 0.5 年。

### **4. Curriculum and Credits Requirements (课程设置与学分要求)**

The curriculum of MEM Program is based on the engineering management discipline, combining with engineering disciplines related. Besides the public courses and basic courses, optional courses are mainly set up in the four professional fields of energy and carbon neutral management, project management, big data and information engineering management, and equipment engineering management, so as to meet the knowledge and quality requirements of the corresponding engineering management practice field for specialized talents.

MEM students are required to achieve no less than 34 credits in total (no less than 32 credits for courses), including 17 credits for public courses, 2 credits for basic courses, 8 credits for discipline core courses, 5 credits for optional courses and 2 credits for compulsory part.

课程设置以工程管理学科为基础，与相关工程学科相结合。在公共课、基础课基础上，以能源与碳中和管理、项目管理、大数据与信息工程管理、装备工程管理四个专业领域为主设置选修课程，以满足相应工程管理实践领域对专门人才的知识与素质要求。

课程实行学分制，总学分不少于 34 学分（课程总学分不少于 32 分），其中公共课 17 学分，基础课 2 学分，学科核心课 8 学分，选修课不少于 5 学分，必修环节不少于 2 学分。

Course Classification 类别	Course Code 课程代码	Course Name 课程名称	Course Hours 学时	Credits 学分	Semester 学期	Compulsory/ Optional 是否必修	Master /Ph.D. 课程 层次	Credits Requirement 学分要求
Public Course 公共课	3700005	Chinese Language I 基础汉语 I	96	6	1	Compulsory 必修	Master 硕士	17
	3700006	Chinese Language II 基础汉语 II	96	6	2	Compulsory 必修	Master 硕士	
	3700002	Outline of China 中国概况	32	2	1/2	Compulsory 必修	Master 硕士	
	2100235	Engineering Ethics (For Professional Degree) 工程伦理学 (专 硕)	32	2	1/2	Compulsory 必修	Master 硕士	
	2100272	Literature Retrieval and Thesis Writing 文献检索与论文写 作	16	1	2	Compulsory 必修	Master 硕士	
Basic Course 基础课	2100007	Managerial Statistics 管理统计学	32	2	1/2	Optional 选修	Master 硕士	≥2
	2100228	Operations Research (For Professional Degree) 运筹学 (专硕)	32	2	1/2	Optional 选修	Master 硕士	
Discipline Core Course 学科核心课	2100100	Engineering Economics 工程经济学	32	2	1/2	Compulsory 必修	Master 硕士	8
	2100013	Management Information System 管理信息系统	32	2	1/2	Compulsory 必修	Master 硕士	

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	2100293	Quality and Reliability Management 质量与可靠性管理	32	2	1/2	Compulsory 必修	Master 硕士	
	2100101	Introduction to Engineering Management 工程管理概论	32	2	1/2	Compulsory 必修	Master 硕士	
Major Optional Course 专业选修课	2100102	Legal Practice of Engineering Management 工程管理法律实务	32	2	1/2	Optional (Public Optional Courses) 选修（公共 选修课）	Master 硕士	≥5
	2100005	Managerial Economics 管理经济学	32	2	1/2		Master 硕士	
	2100036	Management Communication 管理沟通	32	2	1/2		Master 硕士	
	2100286	Energy and Economy 能源与经济	32	2	1/2	Optional (Energy and Carbon Neutral Management) 选修（能源 与碳中和管 理专业领 域）	Master 硕士	
	2100288	Industry Green Management Practice 行业绿色管理实践	32	2	1/2		Master 硕士	
	2100289	Intelligent Energy Management Practice 智慧能源管理实践	32	2	1/2		Master 硕士	

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Major Optional Course 专业选修课	2100290	Energy Policy and Enterprise Management Practice 能源政策与企业管 理实践	32	2	1/2		Master 硕士	≥5
	2100291	Carbon Market Practice 碳市场实践	32	2	1/2		Master 硕士	
	2100087	Project Planning and Control 项目计划与控制	32	2	1/2	Optional (Project Management) 选修（项目 管理专业领 域）	Master 硕士	
	2100104	Risk Management 风险管理	32	2	1		Master 硕士	
	2100088	Project Management Practices 项目管理实务	16	1	2		Master 硕士	
	2100011	Human Resource Management 人力资源管理	32	2	1/2		Master 硕士	
	2100111	Data Warehouse and Data Mining 数据仓库与数据挖 掘	32	2	1/2	Optional (Big Data and Information Engineering Management) 选修（大数 据与信息工 程管理专业 领域）	Master 硕士	
	2100213	Electronic Commerce and Big Data 电子商务与大数据	32	2	2		Master 硕士	
	2100217	Business Intelligence and Data Analysis 商务智能与数据分 析	32	2	1		Master 硕士	

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Major Optional Course 专业选修课	2100256	Machine Learning Theory and Practice 机器学习理论和实 践	32	2	1/2		Master 硕士	≥5
	2100279	Introduction to Digital Economy 数字经济概论	32	2	2		Master 硕士	
	2100275	Enterprise Resource Planning and Digital Operation 企业资源计划与数 字化运营	32	2	1/2	Optional (Equipment Engineering Management) 选修（装备 工程管理专 业领域）	Master 硕士	
	2100006	Operation Management 运作管理	32	2	1/2		Master 硕士	
	2100276	Introduction to Intelligent Manufacturing 智能制造概论	32	2	2		Master 硕士	
	2100260	National Defense Science and Technology and Industrial Management 国防科技与工业管 理	32	2	2		Master 硕士	
	2100038	Service Management 服务管理	32	2	1		Master 硕士	
	2100224	Chinese Management Philosophy and Chinese Classics 中国管理哲学与国 学经典	16	1	2		Optional (Humanities and Arts) 选修（人文 艺术专题）	

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	2100225	Design and Design Aesthetics 设计与设计审美	16	1	1/2		Master 硕士	
	2100277	Art Appreciation 艺术鉴赏	32	2	1		Master 硕士	
Total Credits 合计	≥ 32 credits ≥ 32 学分							

**Notes:**

## 1) Public Course

(1) Chinese Language: Set by International Students Center of BIT. All international students must take this required course.

(2) Outline of China: Set by International Students Center of BIT. All international students must take this required course.

2) Students are free to choose professional fields and optional courses under the guidance of their supervisors.

3) The major optional courses related to the four professional fields are as follows separately.

(1) Professional field of Energy and Carbon Neutral Management: Energy and Economy, Industry Green Management Practice, Intelligent Energy Management Practice, Energy Policy and Enterprise Management Practice, Carbon Market Practice.

(2) Professional field of Project Management: Project Planning and Control, Risk Management, Project Management Practices, Human Resource Management.

(3) Professional field of Big Data and Information Engineering Management: Data Warehouse and Data Mining, Electronic Commerce and Big Data, Business Intelligence and Data Analysis, Machine Learning Theory and Practice, Introduction to Digital Economy.

(4) Professional field of Equipment Engineering Management: Enterprise Resource Planning and Digital Operation, Operation Management, Discrete System Simulation (For Professional Degree), Introduction to Intelligent Manufacturing, National Defense Science and Technology and Industrial Management, Service Management.

4) Students who have passed IPMP A/B/C level Certification or PMP Certification can apply for

exemption from the following three courses: Quality and Reliability Management, Human Resource Management and Introduction to Engineering Management. Scores of the courses are consistent with the scores in the qualification examination.

5) Students who have passed the examinations of the 5 courses, i.e. Introduction to Engineering Management, Engineering Economics, Quality and Reliability Management, Project Planning and Control, and Project Management Practices, with all scores of more than 70 points, can be exempted from the written examination when applying for IPMP C/D level Certification.

### 说明:

#### 1) 公共课

(1) 汉语:由留学生中心开设,所有留学生必修课。

(2) 中国概况:由留学生中心开设,所有留学生必修课。

#### 2) 学生可在导师指导下自由选择专业领域及选修课程。

#### 3) 与四个专业领域相关的专业选修课程如下:

(1) 能源与碳中和管理专业领域:能源与经济、行业绿色管理实践、智慧能源管理实践、能源政策与企业管理实践、碳市场实践。

(2) 项目管理专业领域:项目计划与控制、风险管理、项目管理实务、人力资源管理。

(3) 大数据与信息工程管理专业领域:数据仓库与数据挖掘、电子商务与大数据、商务智能与数据分析、机器学习理论和实践、数字经济概论。

(4) 装备工程管理专业领域:企业资源计划与数字化运营、运作管理、离散系统仿真(专硕)、智能制造概论、国防科技与工业管理、服务管理。

4) 通过《国际项目管理专业资质认证(IPMP)》A/B/C级、通过《项目管理专业人士资格认证(PMP)》的学生可申请替换以下三门课程《质量与可靠性管理》、《人力资源管理》、《工程管理概论》,分数以资质认证考试中的实际成绩为准。

5) 通过《工程管理概论》、《工程经济学》、《质量与可靠性管理》、《项目计划与控制》、《项目管理实务》5门课程考试,而且成绩在70分以上,申请《国际项目管理专业资质认证(IPMP)》C、D级认证考试可免笔试。

## 5. Compulsory Part (必修环节)

### 1) Practice Part (1 credit) 实践环节(1学分)

MEM students should take scientific research training and social practices during their training period, such as internships at relevant companies, which should be carried-out and evaluated by their supervisors. The practice



report should be more than 3000 words.

MEM 留学生在学期间应进行科研训练和社会实践，例如去相关企业进行实习等，并由其导师进行评估。实践报告不少于 3000 字。

## 2) Academic Activities (1 credit) 学术活动（1 学分）

MEM students need to participate in at least 4 seminars about innovation, entrepreneurship, or other topics about engineering management, and write a report of each seminar, to summarize content of the seminar and illustrate their academic opinions. Each report should be more than 800 words.

MEM 留学生在学期间需要至少参加 4 次创新创业或工程管理相关的学术研讨活动。每次学术研讨活动要有 800 字左右的总结报告，简述内容并阐明自己对相关问题的学术观点或看法。

## 6. The Dissertation Related Work（培养环节及学位论文相关工作）

1. Literature Review & Opening Report; 2. Mid-Term Evaluation; 3. Thesis Defense; 4. Degree Conferment

More Details can be found in *Regulations of Training Procedures for International Graduates of BIT*, and *Implementation Regulations on Academic Degree Conferrals of Beijing Institute of Technology*.

Qualified applicants will be conferred with MEM professional degree.

1.文献综述与开题报告； 2.中期检查； 3.论文答辩； 4.学位申请。

具体要求见《北京理工大学留学研究生培养环节实施细则》以及《北京理工大学学位授予工作细则》。

本专业学位类别（领域）对符合要求的硕士学位申请人授予工程管理硕士专业学位。

### Time nodes of relevant procedure（相关环节时间节点要求）

The Dissertation Related Work 学位论文相关工作	Master 硕士
Literature Review& Opening Report 文献综述与开题报告	Before week 1 of the 3 <sup>rd</sup> semester 第三学期第一周（含）前
Mid-Term Evaluation 中期检查	Before the end of the 3 <sup>rd</sup> semester 第三学期期末前
Dissertation Defense 论文答辩	At least 9 months after the Opening Report 距离开题至少 9 个月
Degree Application 学位申请	The application should be raised in a certain time after the Dissertation Defense 答辩后在规定时间内提出申请