西北工业大学

Northwestern Polytechnical University

硕士留学研究生培养方案

Master’s Degree Program for Overseas Students

研究生院

Graduate School

2017 年 6 月

西北工业大学关于硕士留学研究生培养的具体规定

根据《中华人民共和国学位条例》和《中华人民共和国学位条例暂行实施办法》中关于授予外国留学生硕士学位的规定，以及国务院学位委员会、教育部的有关文件精神，结合我校情况，特制定《西北工业大学关于硕士留学研究生培养的具体规定》。

此规定是制定攻读硕士学位留学研究生培养计划，进行培养工作的主要依据，也是招收硕士留学研究生和授予学位的依据之一。

我校硕士留学研究生分为**中文培养**和**全英文培养**两种类型。我校有权授予硕士学位的学科均可招收攻读硕士学位的中文培养留学研究生；制订了硕士留学研究生全英文培养方案的学科，经研究生院审批后可以招收全英文培养硕士留学研究生。

此规定作为攻读硕士学位留学研究生培养的总体要求，各学科可根据此规定制订适合于本学科的硕士留学研究生培养方案。培养方案一经批准，即应遵照执行，如有变动，应按原审批程续办理更改。

各学科硕士留学研究生培养方案中的研究方向、课程设置等可根据本学科的不同要求及本规定进行制定；其中培养目标、培养方式、学习年限、培养环节等具体要求如下。

一、培养目标

1．了解中国的文化、政治、经济与历史，掌握一定程度的汉语。

2．掌握所在学科坚实的基础理论和系统的专门知识，具有从事科学研究工作或独立担负专门技术工作的能力。

3．具有良好的学术道德和敬业精神，身心健康。

二、研究方向

培养方案中应明确列出本学科可以培养硕士留学研究生的若干研究方向。

培养方案中所列的研究方向是招生及培养的依据，要求应是本学科中相当于三级学科的学术领域，且导师及学科内其他教师已做了较多的研究工作、目前仍在进行研究并有比较稳定的课题与经费。

对于交叉或边缘学科中的新兴研究方向，可根据其学科基础暂时纳入相应学科的培养方案中，待条件成熟、经申请批准成立新学科后，另行制定培养方案。

三、培养方式

硕士留学研究生的培养采取导师为第一责任人的导师负责制，也可以实行以导师为主的指导小组负责制。指导小组的组成可根据硕士留学研究生的研究方向及课题内容由导师提名、学院领导批准，小组成员一般由 3~5 名教师（含导师）组成，导师在硕士留学研究生培养中起主导作用。同时，指导小组应协助导师对硕士留学研究生的课程学习、科学研究和学位论文进行指导。学院要指导和检查硕士留学研究生的培养工作。

在培养过程中，应采取理论学习和科学研究相结合的办法，特别要注意培养硕士留学研究生的独立工作能力、自学能力、分析和解决实际问题的能力；要鼓励硕士留学研究生参加学术活动、独立钻研、自己选题和从事探索性的研究。对于缺乏实践经验和因学科交叉而专业知识不足的硕士留学研究生，应创造条件让他们弥补这些不足之处。

四、学习方式及年限

采用全日制学习方式，学习年限一般为 2～3 年。

五、课程设置

硕士留学研究生的课程学习应至少取得 27 学分。

课程要求：

课程类型	课　程　内　容	要求	学分
学位必修课	公共课（汉语语言、中国概况）	必修	8 学分
	基础理论课	必修	至少 5 学分
	专业基础课	必修	6~10 学分
学位选修课	专业课	选修	至少 8 学分

硕士留学研究生的课程计划应在入学后 20 天内制定完毕，课程学习一般应在入学后一年半内完成。

中文培养硕士留学研究生的基础理论课、专业基础课和专业课在我校国内学术型硕士研究生同一学科培养方案中进行选择，并随国内硕士研究生同堂上课。

全英文培养硕士留学研究生的基础理论课、专业基础课和专业课全部采用英语授课，课程在我校公布的硕士留学研究生全英文培养方案中进行选择。

六、培养环节

1. 课程学习

课程学习是硕士留学研究生重要的培养环节，需达到相关学分要求。

2. 论文开题

论文开题工作是硕士留学研究生进行学位论文工作的起点，最迟一般应在第三学期末之前进行。硕士留学研究生应在导师指导下，阅读有关文献尤其是外文文献，形成“文献综述”；开题报告应就选题的科学意义、选题背景、研究内容、预期目标、研究方法和课题条件等做出论证。

学院、学位分会与导师须协商成立硕士学位论文开题评审小组，评审小组由至少三名副高级以上专业技术职称的人员组成，设组长 1 人，硕士留学研究生应向评审小组汇报论文开题报告，评审小组进行严格评审并给出评审意见。

评审通过者，准予继续进行论文研究工作，不合格者予以黄牌警告并限期整改，重新进行论文开题汇报，评审仍不合格者终止培养或走其他分流途径。

硕士留学研究生的论文开题工作一般应在入学后第三学期结束前完成，申请提前答辩的应在第二学期末完成。具体由导师与所在学位分会决定，但论文开题通过至申请答辩的时间一般不少于一年。

3. 中期考核

硕士留学研究生在论文开题后 6 个月左右时间，应提交论文中期进展报告，报告应包括：论文工作是否按开题报告预定的内容及论文计划进度进行；已完成的研究内容，参加的科研学术情况；目前存在的或预期可能出现的问题，拟采用的解决方案等；下一步的工作计划和研究内容。

根据论文中期的研究进展和学科发展，允许硕士留学研究生对论文开题时的论文选题（题目、内容、研究计划等）做出必要的调整。申请学位论文答辩时，学位论文的主要内容应与中期考核后确定的学位论文的内容基本一致。

学院、学位分会与导师协商组成考核小组，考核小组由至少三名副高级以上专业技术职称的人员职称人员组成，设组长 1 人，考核小组负责对硕士留学研究生提交的论文中期进展报告进行严格审查。审查合格者，准予继续进行论文研究工作，不合格者予以黄牌警告并限期整改，重新提交报告，再次考核仍不合格者终止培养或走其他分流途径。

4. 学位论文撰写

硕士学位论文是硕士留学研究生在导师指导下独立完成的、系统完整的学术研究工作的总结，硕士学位论文应具有较好的学术性和相当的工作量，利用已有的理论或方法解决了本学科的科学问题，进行必要的理论分析并得到正确结果。具体要求按《西北工业大学关于学位论文撰写的规定》执行。

中文培养硕士留学研究生的学位论文应由中文撰写，包含一个相应的英文摘要；全英文培养硕士留学研究生的学位论文应由英文撰写，包含一个相应的中文摘要。

5. 学位论文答辩

申请学位论文答辩参照校学位评定委员会的规定执行。

中文培养硕士留学研究生的学位论文答辩，应使用汉语进行答辩；全英文培养硕士留学研究生的学位论文答辩，应使用英语进行答辩。

Regulations on Cultivating Overseas Students in Master's Program of Northwestern Polytechnical University

Regulations on Cultivating Overseas Students in Master's Program of Northwestern Polytechnical University are formulated in accordance with conferring master's degree on overseas students in *Regulations of the People's Republic of China on Academic Degrees, Interim Measures for Implementation of the Regulations of the People's Republic of China on Academic Degrees* and norms of relevant documents carried out by the Academic Degree Committee of the State Council and Ministry of Education and in combination with practical situations of NPU.

These regulations are the main foundation for formulating and implementing the master's program for overseas students. They are also the fundamental principles for those students' recruitment and their master's degree conferment.

We offer two types of master's program for those overseas students--- cultivated in English and in Chinese respectively. Those Disciplines that are authorized to confer master's degree in NPU shall recruit applied overseas students and cultivate them in Chinese. As for English-cultivated disciplines, after being approved by the Graduate School of NPU, shall also recruit overseas students applying for master's degree and cultivate them in English.

These regulations are the general requirements for cultivating overseas students in master's program. Each separate discipline shall formulate its own cultivating program for overseas students. Once approved, the program shall be put into enforcement strictly. If there are any changes, alterations shall be made according to the original approval procedures.

The research fields and curriculum for the overseas students in master's program shall be formulated in accordance with their different requirements. The provisions of cultivating objectives, cultivating plans, duration of study, cultivating process, publishing papers and requirements for scientific achievements are as follows:

A. **Cultivating Objectives**

a. to enable overseas students to have a comprehensive understanding of China, including its politics, economy, history as well as culture and to enable them to have basic capability to understand and communicate with others in Chinese.

b. to equip overseas students with all-round basic theories and systematic and professional knowledge in disciplines concerned, and with skills to do scientific research independently so as to make creative contributions in science and technology.

c. to benefit students' physical and mental health, and to provide them with good academic ethics and spirits and to cultivate their scientific and practical learning attitude and working style.

B. **Research Field**

Research fields for overseas students in cultivating plans of master's program should be listed explicitly.

The research fields are the basis of recruiting and cultivating the overseas students. The research fields are required to be in the third-level academic areas in disciplines. Mentors and other teachers in disciplines concerned are required to have done much research work and their programs are still continuing supported by stable subjects and funds in relevant fields. The research fields must reflect cutting edge of disciplines concerned, and follow advanced scientific development at home or abroad.

Those emerging research fields in the interdisciplinary or marginal disciplines can be incorporated into the master's program based on relevant disciplines. The corresponding master's program should be formulated after new disciplines' approval and establishment.

C. **Cultivating Plan**

Cultivating overseas students in master's program is based on the mentor responsibility system which adopts a mentor as the first responsible one or a mentor-based responsibility of the instructing team. The instructing team, composed of 3-5 associate professors and professional teachers (including mentors), shall be nominated by mentors and then approved by relevant schools with mentors playing a leading role in the overseas graduates' cultivating according to research fields and contents of subjects. The instructing team shall assist mentors to instruct in courses, research work and dissertation. Schools and the Branch of Degree Committee shall guide and inspect the program of cultivating the overseas students' pursuing master's degree.

During the process of cultivating program, both theoretical study and scientific research shall be combined together. The program shall pay attention to cultivate the ability of doing scientific work

creatively and independently, to teach them how to learn by themselves, how to analyze and solve practical problems. To participate in academic activities and to be engaged in research independently are encouraged and supported, and to select the research field of the thesis and to do exploring research are also welcomed. For those students who are lack of experience and expertise and interdisciplinary knowledge, mentors and schools shall create favorable environment for them to make up.

D. **Types of Study and Duration**

The master's program requires 2~3 years of full-time study.

E. **Curriculum Requirements**

Overseas students in master's program should get at least 27 credits in courses.

Curriculum requirements:

Curriculum	**Course Content**	**Requirement**	**Credits**
Compulsory Courses	Public Courses (Chinese Language, Brief Introduction of China)	Compulsory	8 credits
	Basic Theory Courses	Compulsory	≥5 credits
	Basic Specialized Courses	Compulsory	6~10 credits
Elective Courses	Specialized Courses	Elective	≥ 8 credits

The curriculum plans for overseas students in master's program shall be completed within 20 days after enrollment, and the courses concerned shall be finished within one year after entrance.

The courses of basic theory, specialized basic courses and specialized courses for overseas students cultivated in Chinese shall be selected among the courses the same as in domestic academic master's cultivating program. And the overseas students shall attend the classes concerned together with domestic students of NPU.

The basic theory courses, basic specialized courses and specialized courses of overseas students cultivated in English shall be taught in English. And all these courses can be selected among the courses in the master's program of English-cultivated.

F. **Cultivating Process**

a. Course of Study

Course of study in the master's program is an important process in cultivating postgraduates, which shall meet relevant requirements for credits.

b. Dissertation Proposal

The dissertation proposal in master's program is a starting point for dissertation writing; it shall normally be carried out before the end of third semester. The students shall read relevant books, especially foreign literature works, and write literature review under the guidance of mentors. The proposal shall include significance of selected topic, research background, contents of research, expected objective, research methodology and premises of research etc.

Reviewing panels of master's program shall be established under the agreement among the relevant school, the Branch of Degree Committee and mentors. The panels shall consist of at least three vice-senior professional technicians, one of them be the chairman of reviewing panels. The students are required to make a presentation on their dissertation proposal and then the reviewing panels evaluate the proposals strictly and make decisions.

The overseas students in the master's program who pass the assessment shall be permitted to continue their dissertation writing. For those who fail, they shall be given yellow card warning and make rectifications within a time limit, and then make presentations again. If they still fail, their master's degree shall be terminated or they shall be cultivated in other reversed programs.

The dissertation proposal of master's program is designed to be finished before the end of the third semester. Whoever applying for defense in advance shall finish at the end of the second semester. The requirements for dissertation proposal are decided by mentors and the Branch of Degree Committees. The whole process from the proposal to application for defense of dissertation shall be no less than one year.

c. Mid-term Assessment

The interim progress report of the dissertation writing of master's program shall be submitted and reported to the assessment team around six months after the approval of proposal. The content of the report shall include the following aspects: whether the dissertation writing is conducted in accordance with the previously expected contents and schedule of research or not; the completed research; academic research activities; current or potential problems and possible solutions, and further work of research. Materials such as submitted papers, published papers, patents and scientific research achievements shall be included in the reports.

In terms of the interim progress and the development of disciplines concerned, the overseas students in the master's program are allowed to make necessary adjustments about certain contents in their proposals (including title, contents, schedule planning, etc). When they apply for the oral defense of dissertation of master's degree, the contents of the dissertation shall be basically consistent with the confirmed contents in the mid-term assessment.

Similarly, the assessment team for the mid-term assessment is established under the agreement among the school, the Branch of Degree Committee and mentors. The team shall consist of at least three vice-senior professional technicians (one of them as the chairman). The assessment team shall evaluate the interim progress report. The overseas students in the master's program who pass the assessment shall be permitted to continue their dissertation writing. For those who fail the assessment, they shall be given yellow card warning and need to modify it in stipulated time, and then report it again. If they still cannot pass the assessment, the master's degree shall be terminated or they shall be cultivated in other programs.

d. Dissertation Writing

Dissertation of master's degree is a systematic and academic research result done by the students independently under the guidance of their mentors. The dissertation shall be academic and be finished by considerable efforts, solve scientific problems in the disciplines concerned by taking advantage of existing theories or methodology, obtaining satisfactory results by conducting necessary theoretical analysis. As for the requirements of dissertation writing, please refer to *The Regulations of Degree Dissertation Writing in Northwestern Polytechnical University*.

The dissertation of overseas students cultivated in Chinese shall be written in Chinese and a corresponding abstract in English is required while cultivated in English shall be written in English and a corresponding abstract in Chinese is also required.

e. Dissertation Defense

The implementation of dissertation defense shall abide by the provisions of Degree Evaluation Committee of NPU.

The dissertation defense of the students cultivated in Chinese shall be done in Chinese while the cultivated in English shall be done in English.

各学科（学院）硕士留学研究生全英文培养

研究方向及课程设置

Research Field and Curriculum Provision

目　录

Contents

1. 航空器结构与适航技术（航空学院）

Aircraft Structures and Airworthiness Technology（School of Aeronautics）

学科代码（Discipline Code） **0801Z2**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	飞行器结构完整性 Aircraft Structural Integrity
2	飞行器结构动强度设计、分析、验证 Aircraft Structural Dynamics and Strength Design, Analysis and Verification
3	航空器结构适航技术 Aircraft Structural Airworthiness Technology

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam

M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M01M12001	高等弹性力学 Advanced Elasticity	40	2.0	1	考试 Exam
M01M12002	高等结构动力学 Advanced Structural Dynamics	40	2.0	2	考试 Exam
M01M12003	结构疲劳与可靠性分析 Analysis of Structural Fatigue and Reliability	40	2.0	1	考试 Exam
M01M12004	有限元方法及应用 Fundamental and Application of Finite Element Method	40	2.0	2	考试 Exam
M01M12005	连续介质力学 Fundamentals of Continuum Mechanics	40	2.0	2	考试 Exam
M01M12006	塑性力学 Theory of Plasticity	40	2.0	2	考试 Exam
M01M12007	气动弹性设计与分析 Aeroelastic Design and Analysis for Aircraft	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M01M12008	复合材料结构力学 Mechanics of Composite Structures	40	2.0	2	考试 Exam
M01M12009	飞行器结构疲劳寿命评估方法 Evaluation methods of aircraft structure fatigue life	40	2.0	2	考试 Exam
M01M12010	振动测试原理与方法 Principles and Methods of Vibration Test	40	2.0	1	考试 Exam
M01M12011	应力波理论及应用 Theory and Application of Stress Wave	40	2.0	1	考试 Exam

M01M12012	轻质材料结构分析理论及应用 Theory and Application of Light Weight Materials and Structures	40	2.0	1	考试 Exam
M01M12013	计算断裂力学 Computational Fracture Mechanics	40	2.0	2	考试 Exam
M01M12015	随机振动与谱分析 Random Vibration and Spectral Analysis	40	2.0	1	考试 Exam

2. 流体力学（航空学院）

Fluid Mechanics（School of Aeronautics）

学科代码（Discipline Code） **080103**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	理论空气动力学与流动控制 Theoretical Aerodynamics and Flow Control
2	飞行器设计空气动力学 Aerodynamics on Vehicle Design
3	计算流体力学 Computational Fluid Dynamics
4	实验空气动力学 Experimental Fluid Dynamics
5	高超声速空气动力学 Hypersonic Aerodynamics
6	气动声学 Aeroacoustics
7	多学科耦合空气动力学 Multi-Disciplinary Coupled Aerodynamics
8	工业空气动力学与风工程 Industrial Aerodynamics and Wind Engineering

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M01M12016	空气动力学基础 Foundations of Aerodynamics	40	2.0	1	考试 Exam
M01M12017	实验流体力学的基本理论与方法 Fundamental Theory and Method for Experimental Fluid Dynamics	40	2.0	2	考试 Exam
M01M12018	粘性流体力学基础 Fundamentals of Viscous Fluid Dynamics	40	2.0	2	考试 Exam
M01M12019	计算流体力学基础 Basics of Computational Fluid Dynamics	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M01M12020	风洞实验技术基础 Basic Techniques of Wind Tunnel Test	40	2.0	2	考试 Exam
M01M12021	航空声学基础 基础 Aeroacoustics	40	2.0	1	考试 Exam
M01M12022	流固耦合力学基础 Fundamentals of Fluid-Structure Interaction	40	2.0	2	考试 Exam

M01M12023	高超声速流动基础理论 Basic Theory of Hypersonic Aerodynamics	40	2.0	1	考试 Exam
M01M12024	湍流基础 Introduction to Turbulence	40	2.0	2	考试 Exam
M01M12025	飞机气动弹性及载荷引论 Introduction to Aircraft Aeroelasticity and Loads	40	2.0	2	考试 Exam
M01M12026	风洞设计基础 Fundamentals of Wind Tunnel Design	40	2.0	1	考查 Test

3. 载运工具运用工程（航空学院）

Means of Transport Applied Engineering（School of Aeronautics）

学科代码（Discipline Code） **082304**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	适航技术与管理 Airworthiness Technology and Management
2	航空器信息与电子电气系统 Aircraft Information and Electronic & Electrical System
3	航空器维修技术 Aircraft Repair Technology
4	故障诊断、预测与健康管理 Fault Diagnosis, Prognosis and Health Management
5	工程材料的腐蚀防护技术研究 Corrosion and Protection Technology Research of Engineering Materials

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M01M12004	有限元方法及应用 Fundamental and Application of Finite Element Method	40	2.0	2	考试 Exam
M01M12027	民用航空适航技术基础 Fundamentals of Civil Aviation Airworthiness	40	2.0	1	考试 Exam
M01M12028	飞机结构维修与适航 Aircraft Structural Repair and Airworthiness	40	2.0	1	考试 Exam
M01M12029	摩擦学原理与应用 Tribology Theory and Application	40	2.0	2	考试 Exam
M01M12030	现代信号处理及应用 Advanced Signal Processing and It's Application	40	2.0	1	考试 Exam
M01M12031	航空器电系统故障预测与健康管理 Prognosis and Health Management of Aircraft Electronics System	40	2.0	2	考试 Exam
M01M12032	微机测控技术 Microcomputer Measurement and Control Technology	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M01M12033	有限元程序设计与仿真技术 Finite Element Programming and Simulation Technology	40	2.0	2	考试 Exam

M01M12037	虚拟现实与虚拟维修 Virtual Reality and Virtual Maintenance	40	2.0	1	考试 Exam
M01M12038	电力电子系统建模与控制 Modeling and Control of Power Electronics Systems	40	2.0	1	考试 Exam
M01M12039	智能图像图形处理 Intelligent Image and Graphics Processing	40	2.0	2	考试 Exam
M01M12040	机载系统容错设计与可靠性工程 Fault-tolerant Design and Reliability Engineering for Airborne System	40	2.0	1	考试 Exam
M01M12041	VHDL 语言与复杂数字系统设计 VHDL and Complex Digital System Design	40	2.0	2	考试 Exam
M01M12042	机载电子设备自动测试 Automatic Tests of Airborne Electronic Equipment	40	2.0	2	考试 Exam
M01M12043	航电系统故障诊断与健康管理 Fault Diagnosis and Health Management of Avionics Systems	40	2.0	1	考试 Exam
M01M12044	航空器伺服控制系统 Aircraft Servo Control System	40	2.0	1	考试 Exam

4. 飞行器设计（航空学院）

Flight Vehicle Design（School of Aeronautics）

学科代码（Discipline Code） **082501**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	飞行器总体设计 Conceptual Design of Flight Vehicle
2	飞行器结构设计 Structural Design of Flight Vehicle
3	飞行器可靠性工程 Reliability Engineering of Flight Vehicle
4	飞行器气动外形与隐身一体化设计 Integrated Design of Aerodynamic Configuration and Stealth for Flight Vehicle
5	飞行器飞行动力学与控制 Flight Dynamics and Control of Flight Vehicle
6	主动控制/综合控制/飞行管理技术 Active Control/Integrated Control/Flight Management Technology
7	民用飞机结构健康检测与维修工程 Civil Aircraft Structural Health Diagnosis and Maintenance Engineering

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M01M12045	飞行器设计原理 Fundamentals of Flight Vehicle Design	20	1.0	1	考试 Exam
M01M12046	结构有限元素法 Structural Finite Element Method	40	2.0	2	考试 Exam
M01M12048	结构、机构可靠性设计基础 Fundamental of Structure and Mechanism Reliability Design	40	2.0	1	考试 Exam
M01M12050	复合材料结构分析与设计 Structure Analysis and Design of Composite Materials	40	2.0	1	考试 Exam
M01M12052	大气飞行动力学 Dynamics of Atmosphere Flight	20	1.0	1	考试 Exam
M01M12053	飞行控制原理 Aircraft Flight Control System	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M01M12028	飞机结构维修与适航 Aircraft Structural Repair and Airworthiness	40	2.0	1	考试 Exam
M01M12051	飞行器结构疲劳寿命 Methodology of Flight Vehicle Fatigue Life Prediction	40	2.0	1	考试 Exam

M01M12054	工程结构优化设计 Optimized Design of Engineering Structure	40	2.0	2	考试 Exam
M01M12059	人机系统可靠性与安全性 Reliability and Safety of Human-Machine System	40	2.0	1	考试 Exam
M01M12060	飞行原理与飞行控制 Flight Mechanics and Flight Control	40	2.0	1	考试 Exam

5. 导航、制导与控制（航天学院）

Navigation, Guidance and Control（School of Astronautics）

学科代码（Discipline Code） **081105**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	飞行器制导与控制系统 Guidance and Control Systems of Flight Vehicles
2	飞行控制与仿真技术 Flight Control and Simulation Technique
3	先进控制理论及应用 Advanced Control Theories and Its Applications
4	通信、测控、信息安全与对抗技术 Communication, Measurement and Control, Security and Counterwork Technology of Information

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic SpecializedCourses (degree compulsory, at least 6 credits, selected fromthe following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M02M12007	航天器制导与控制 Guidance and Control of Space Vehicles	40	2.0	1	考试 Exam
M02M12027	线性系统理论 Linear System Theory	40	2.0	1	考试 Exam
M02M12028	自适应控制 Adaptive Control	40	2.0	2	考试 Exam
M02M12029	系统辨识 System Identification	40	2.0	1	考试 Exam
M02M12030	最优控制 Optimal Control	40	2.0	2	考试 Exam
M02M12031	最优估计 Optimal Estimation	40	2.0	2	考试 Exam
M02M12032	现代鲁棒控制 Modern Robust Control Theory	40	2.0	2	考试 Exam
M02M12033	组合导航技术 Integrated Navigation	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M02M12009	卫星导航原理与应用 Elements and Application of Satellite Navigation System	40	2.0	1	考试 Exam
M02M12010	计算智能导论 Introduction to Intelligence	40	2.0	2	考试 Exam

M02M12011	面向机器知觉的仿生智能感知 Bio-inspired Intelligent Perception for Machine Awareness	40	2.0	2	考试 Exam
M02M12026	空间机器人学 Space Robotics	40	2.0	1	考试 Exam
M02M12034	导弹作战效能分析 Missile Effectiveness Analysis	40	2.0	1	考试 Exam
M02M12035	空天光电探测技术 Sky Photoelectric Exploratory Technology	40	2.0	1	考试 Exam
M02M12036	导弹先进制导与控制系统 Advanced Guidance and Control System of Missile	40	2.0	2	考试 Exam
M02M12037	导弹计算机智能控制系统 Compute Intelligent Control System for Missile	40	2.0	1	考试 Exam
M02M12038	飞行器仿真理论与仿真环境 Advanced Simulation Theory and Device for Guide Weapon	40	2.0	1	考试 Exam
M02M12039	模式识别 Pattern Recognition	40	2.0	1	考试 Exam
M02M12040	非线性控制系统 Nonlinear Control Systems	40	2.0	1	考试 Exam
M02M12041	景象匹配与目标识别技术 Image Matching and Target Recognition Technologies	40	2.0	1	考试 Exam
M02M12045	机器学习 Machine Learning	40	2.0	2	考试 Exam

6. 航空宇航科学与技术（航天学院）

Aeronautical and Astronautical Science and Technology（School of Astronautics）

学科代码（Discipline Code） **082500**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	发动机总体设计 Propulsion System Design
2	发动机燃烧与流动 Combustion and Flow in Engine
3	传热、传质与热结构 Heat and MassTransfer, Thermo-Stucture
4	发动机测试与故障诊断 Testing and Fault Diagnosis of Propulsion System
5	飞行器总体设计 Conceptual Design of Flight Vehicle
6	飞行器结构设计 Structural Design of Flight Vehicle
7	飞行器飞行动力学与控制 Flight Dynamics and Control of Flight Vehicle
8	空天飞行器系统与技术 Aerospace Flight Vehicle System and Technology
9	飞行器系统工程与仿真 Flight Vehicle System Engineering and Technology

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam

M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits,selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected fromthe following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M02M12016	航天飞行器设计 Aerospace Flight Vehicle Design Methodologies	40	2.0	1	考试 Exam
M02M12004	飞行器计算结构力学 Computational Structural Mechanics of Flight Vehicle	40	2.0	2	考试 Exam
M02M12003	高等结构动力学 Advanced Structural Dynamics	40	2.0	1	考试 Exam
M02M12002	飞行力学最优控制与估计理论 Theory of Flight Mechanics Optimal Control and Estimation	40	2.0	1	考试 Exam
M02M12017	计算流体力学基础 Computational Fluid Dynamics	40	2.0	2	考试 Exam
M02M12018	燃烧理论 Combustion Theory	40	2.0	2	考试 Exam
M02M12019	化学热力学与动力学 Thermodynamicsand Chemical Dynamics	40	2.0	2	考试 Exam
M02M12020	传热传质学 Heat and Mass Transfer	40	2.0	1	考试 Exam
M02M12009	卫星导航原理与应用 Elements and Application of Satellite Navigation System	40	2.0	2	考试 Exam

M02M12006	轨道力学 Orbital Dynamics	40	2.0	1	考试 Exam
M02M12021	复合材料结构力学 Structure Mechanics of Composite Materials	40	2.0	1	考试 Exam
M02M12012	飞行器智能材料与结构 Smart Material andStructures of Flight Vehicles	40	2.0	1	考试 Exam
M02M12022	气动弹性力学 Aeroelasticity	40	2.0	1	考试 Exam
M02M12042	航天器空气动力学 Aerodynamics of Spacecraft	40	2.0	2	考试 Exam
M02M12043	飞行器现代结构设计方法 Modern Design Methods for Aerospace Structures	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M02M12001	飞行器飞行力学 Flight Vehicle Dynamics	40	2.0	2	考试 Exam
M02M12023	电推进原理与系统结构 Elements of Electric Propulsion System	40	2.0	2	考试 Exam
M02M12024	飞行器现代结构设计 Modern Vehicle Structural Design	40	2.0	1	考试 Exam
M02M12013	燃烧诊断学 Combustion Diagnosis	40	2.0	1	考试 Exam
M02M12014	火箭发动机设计 Design of Rocket Engine	40	2.0	2	考试 Exam
M02M12015	火箭推进 Rocket Propulsion	40	2.0	2	考试 Exam
M02M12025	空气动力学 Aerodynamics	40	2.0	1	考试 Exam
M02M12026	空间机器人学 Space Robotics	40	2.0	1	考试 Exam
M02M12044	推进剂配方及性能 Formulations and Performances of Propellants	40	2.0	2	考试 Exam

7. 声学（航海学院）

Acoustics（School of Marine Science and Technology）

学科代码（Discipline Code） **070206**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	环境声学 Environmental Acoustics
2	物理声学 Physical Acoustics
3	水声学 Underwater Acoustics
4	声信息处理 Acoustic Signal Processing

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning hour	**学分** Credit	**开课学期** Learning semester	**考核方式** Assessment
M03M12001	阵列信号处理 Array Signal Processing	40	2.0	2	考试 Exam
M03M12002	随机信号原理 Random Signal Principles	40	2.0	1	考试 Exam
M03M12003	舱室声学 Room Acoustics	20	1.0	1	考试 Exam
M03M12004	声学理论基础 Fundamention of Acoustic Theory	40	2.0	1	考试 Exam
M03M12005	工程声学 Engineering Acoustics	20	1.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized courses (degree elective, choose at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M03M12006	有限元方法及应用 Finite Element Method and its Applications	40	2.0	2	考试 Exam
M03M12007	现代谱分析 Modern Spectrum Analysis	40	2.0	1	考试 Exam
M03M12008	噪声与振动有源控制 Active Noise and Vibration Control	20	1.0	1	考试 Exam
M03M12009	声学测量 Acoustic Measurement	40	2.0	1	考查 Exam
M03M12010	计算声学 Computational Acoustics	20	1.0	1	考试 Exam

M03M12011	统计信号处理 Statistical Signal Processing	20	1.0	1	考试 Exam
M03M12012	声学材料与结构 Acoustic Materials and Structures	30	1.5	2	考试 Exam
M03M12013	机器学习与声信号处理 Machine Learning and Signal Processing	20	1.0	1	考查 Test

8. 信息与通信工程（航海学院）

Information and Communication Engineering

（School of Marine Science and Technology）

学科代码（Discipline Code） **081000**

一、 研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	通信与信息系统 Communication and Information System
2	信号与信息处理 Signal and Information Processing

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam

M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M03M12014	数字信号处理理论及应用 Digital Signal Processing Theory and Applications	60	3.0	1	考试 Exam
M03M12015	水声通信原理 The Principle of Underwater Acoustic Communications	40	2.0	1	考试 Exam
M03M12001	阵列信号处理 Array Signal Processing	40	2.0	2	考试 Exam
M03M12016	自适应信号处理 Adaptive Signal Processing	60	3.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M03M12017	自适应滤波理论与实现 Adaptive Filter and Implementation	60	3.0	2	考查 Test
M03M12018	海洋多维信息可视化技术 The Technology of Multi-Dimensions Information Visualization for Marine	40	2.0	2	考试 Exam
M03M12019	随机信号分析 Random Signal Analysis	40	2.0	1	考试 Exam
M03M12020	水下信号与信息处理 Underwater Signal & Information Processing	40	2.0	2	考试 Exam
M03M12021	时频分析及应用 Time Frequency Analysis and its Application	40	2.0	2	考试 Exam
M03M12022	MIMO 阵列信号处理 MIMO Array Signal Processing	40	2.0	2	考试 Exam
M03M12007	现代谱分析 Modern Spectral Analysis	40	2.0	1	考试 Exam
M03M12023	科技论文写作 Scientific Writing	30	1.5	1	考查 Test

9. 船舶与海洋工程（航海学院）

Naval Architecture and Marine Engineering（School of Marine Science and Technology）

学科代码（Discipline Code） **082400**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	海洋声学 Ocean Acoustics
2	水声信号与信息处理 Underwater Acoustic Signal and Information Processing
3	声呐技术 Sonar Technique
4	导航制导与控制 Navigation, Guidance and Control
5	水下机器人技术 Underwater Vehicle Technology
6	先进控制理论与仿真技术 Advance Control Theory and Simulation Technology
7	船舶与海洋结构物设计制造 Design and Manufacturer of Ships and Marine Structures

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M03M12024	水下航行器流体力学 Unmanned Underwater Vehicle Fluid Mechanics	40	2.0	2	考试 Exam
M03M12025	水下航行器优化设计 Optimization Design of Automatic Underwater Vehicle	40	2.0	2	考试 Exam
M03M12026	水动力学 Hydrodynamics	40	2.0	1	考试 Exam
M03M12027	最优估计理论 Optimal Estimation Theory	40	2.0	1	考试 Exam
M03M12028	机器人导论 Introduction to Robotics	40	2.0	2	考试 Exam
M03M12029	电力电子技术 Power Electronics Technology	40	2.0	2	考试 Exam
M03M12030	实用数字信号处理 Applied Digital Signal Processing	40	2.0	2	考试 Exam
M03M12001	阵列信号处理 Array Signal Processing	40	2.0	2	考试 Exam
M03M12002	随机信号原理 Principle of Random Signal Processing	40	2.0	2	考试 Exam
M03M12016	自适应信号处理 Adaptive Signal Processing	40	2.0	2	考试 Exam

M03M12031	线性系统与控制 Linear Systems and Control	40	2.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M03M12032	海洋航行器动力学 Dynamics of Ocean Vehicles	40	2.0	2	考试 Exam
M03M12033	超空泡航行体流体动力学 Fluid Dynamics of Supercavitating Vehicles	40	2.0	1	考试 Exam
M03M12034	可靠性和维修性 Reliability and Maintainability	40	2.0	2	考试 Exam
M03M12035	分布式估计与控制 Distributed Estimation and Control	40	2.0	2	考试 Exam
M03M12036	水下航行器导航与定位技术 Navigation and Positioning of Underwater Vehicle	40	2.0	1	考试 Exam
M03M12037	计算海洋声学 Computational Ocean Acoustics	40	2.0	2	考试 Exam
M03M12038	信息论与编码 Information Theory and Coding	40	2.0	2	考试 Exam
M03M12039	水声换能器及基阵 Transducers and Arrays for Underwater Sound	40	2.0	2	考查 Test
M03M12040	水下航行器运动控制 Motion Control of Underwater Vehicles	40	2.0	1	考试 Exam
M03M12041	水下机器人导航与控制 Underwater Robotics Navigation and Control	40	2.0	1	考试 Exam
M03M12042	水下动力推进技术新进展 Advances in Underwater Power and Propulsion System	40	2.0	1	考试 Exam
M03M12043	机械工程信号测量 Signal Measurement in Mechanical Engineering	40	2.0	2	考试 Exam

10. 兵器科学与技术（航海学院）

Armament Science and Technology（School of Marine Science and Technology）

学科代码（Discipline Code） **082600**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	总体设计与仿真技术 System Design Technology and Simulation Technology
2	发射与回收技术 Launch and Recovery Technology
3	能源与动力技术 Energy and Power Technique
4	流体动力与减阻降噪技术 Hydrodynamics and Drag-reducing&Noise-suppressing Technology
5	水下信号处理与自导技术 Underwater Signal Process and Self-Guidance Technology
6	水下导航 Underwater Navigation Systems
7	水下控制 Underwater Control Systems
8	先进控制理论与仿真技术 Advance Control Theory and Simulation Technology

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M03M12025	水下航行器优化设计 Optimization Design of Automatic Underwater Vehicle	40	2.0	2	考试 Exam
M03M12026	水动力学 Hydrodynamics	40	2.0	1	考试 Exam
M03M12043	机械工程信号测量 Signal Measurement in Mechanical Engineering	40	2.0	2	考试 Exam
M03M12035	分布式估计与控制 Distributed Estimation and Control	40	2.0	2	考试 Exam
M03M12040	水下航行器运动控制 Motion Control of Underwater Vehicles	40	2.0	1	考试 Exam
M03M12014	数字信号处理理论及应用 Digital Signal Processing Theory and Applications	60	3.0	1	考试 Exam
M03M12015	水声通信原理 The Principle of Underwater Acoustic Communications	40	2.0	1	考试 Exam
M03M12029	电力电子技术 Power Electronics Technology	40	2.0	2	考试 Exam

M03M12001	阵列信号处理 Array Signal Processing	40	2.0	2	考试 Exam
M03M12031	线性系统与控制 Linear Systems and Control	40	2.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M03M12033	超空泡航行体流体动力学 Fluid Dynamics of Supercavitating Vehicles	40	2.0	1	考试 Exam
M03M12034	可靠性和维修性 Reliability and Maintainability	40	2.0	2	考试 Exam
M03M12006	有限元方法及应用 Fundamental and Application of Finite Element Method	40	2.0	2	考试 Exam
M03M12042	水下动力推进技术新进展 Advances in Underwater Power and Propulsion System	40	2.0	1	考试 Exam
M03M12028	机器人导论 Introduction to Robotics	40	2.0	2	考试 Exam
M03M12044	最优估计理论 I Optimal Estimation Theory I	40	2.0	1	考试 Exam
M03M12045	Matlab 程序设计及信号处理实验 Matlab Programming and Signal Processing Experiments	40	2.0	3	考查 Test
M03M12018	海洋多维信息可视化技术 The Technology of Multi-Dimensions Information Visualization for Marine	40	2.0	2	考试 Exam
M03M12022	MIMO 阵列信号处理 MIMO Array Signal Processing	40	2.0	2	考试 Exam
M03M12007	现代谱分析 Modern Spectral Analysis	40	2.0	1	考试 Exam
M03M12023	科技论文写作 Scientific Writing	30	1.5	1	考查 Test

11. 材料学（材料学院）

Materials Science（School of Materials Science and Engineering）

学科代码（Discipline Code） **080502**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	金属材料 Metal Materials
2	无机非金属材料 Inorganic Materials
3	材料的结构与性能 Materials Structure and Property
4	材料的腐蚀与表面技术 Corrosion and Surface Technology of Materials
5	纳米材料 Nano Materials
6	生物材料（生命学院） Biomaterials（School of Life Sciences
7	材料设计与制备的计算机模拟 Modeling of Materials Design and Processing

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M04M12001	材料科学与工程 Materials Science and Engineering	40	2.0	2	考试 Exam
M04M12002	凝固技术 Solidification Technology	40	2.0	2	考试 Exam
M04M12003	复合材料原理 Fundamentals of Composites	40	2.0	2	考试 Exam
M04M12004	固相焊接技术 Solid-State Welding	40	2.0	2	考试 Exam
M04M12005	高温合金 Superalloys	40	2.0	2	考试 Exam
M04M12006	纳米合金 Nanoalloy	40	2.0	2	考试 Exam
M04M12007	材料的电子显微分析 Electron Microscopy and Analysis for Materials	40	2.0	2	考试 Exam
M04M12008	凝固微观组织数值模拟 Solidification Microstructure Simulation	40	2.0	2	考试 Exam
M04M12009	碳/碳复合材料 Carbon-carbon Composites	40	2.0	2	考试 Exam
M04M12010	材料物理 Materials Physics	60	3.0	2	考试 Exam
M04M12011	高温材料表面防护及涂层技术 Surface Protection and Coating Technique for High-temperature Materials	40	2.0	2	考试 Exam

M04M12012	碳材料导论 Introduction to Carbon Materials	40	2.0	2	考试 Exam
M04M12013	纳米材料与纳米技术 Nanostructured Materials and Nanotechnology	40	2.0	2	考试 Exam
M04M12014	材料计算模拟与设计 Computational Materials Modelling and Design	40	2.0	2	考试 Exam
M04M12015	半导体物理与材料特性 Physics and Materials Properties of Semiconductors	40	2.0	1	考试 Exam
M04M12016	熔体特性与熔体生长技术 Melt Characteristics and Melt Growth Techniques	40	2.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M04M12017	化学气相沉积原理 Principles of Chemical Vapor Deposition	40	2.0	2	考查 Test
M04M12018	位错理论与材料强度 Dislocations Theory and Material Strength	40	2.0	2	考查 Test
M04M12019	现代热喷涂技术 Modern Thermal Spray Technology	40	2.0	2	考查 Test
M04M12020	左手材料的光学电磁导论 Introduction to Optics and Electromagnetism in Metamaterials	40	2.0	2	考查 Test
M04M12021	轻金属及其合金的凝固加工 Solidification Processing of Light Metals and Alloys	40	2.0	2	考查 Test
M04M12022	现代焊接技术 Modern Welding Technology	40	2.0	2	考查 Test
M04M12023	第一性原理模拟 First Principles Simulation	40	2.0	2	考查 Test
M04M12024	塑性成形多尺度建模仿真 Multiscale Modeling and Simulation of Material Plastic Forming	40	2.0	2	考查 Test

M04M12025	沥青材料 Pitch Materials	40	2.0	1	考查 Test
M04M12026	新型能源材料 Advanced Energy Materials	40	2.0	2	考查 Test
M04M12027	交通智能新型碳材料 New Carbon Materials for Intelligent Transportation	40	2.0	2	考查 Test
M04M12028	晶体生长基础 Fundamental of Crystal Growth	40	2.0	1	考查 Test
M04M12029	材料的先进表征技术 Advanced Characterization Techniques of Materials	40	2.0	2	考查 Test
M04M12030	材料微结构分析与表征 Microstructure Analysis of Advanced Materials	40	2.0	1	考查 Test
M04M12031	热力学极值原理及其应用 Thermodynamic Extremal Principle and its Application	40	2.0	1	考查 Test
M04M12032	功能陶瓷导论 Introduction to Functional Ceramics	40	2.0	1	考查 Test
M04M12033	先进反应堆结构材料 Advanced Nuclear Structural Materials	40	2.0	1	考查 Test
M04M12034	电化学原理、方法与应用 Fundamentals、Measurement Methods and Applications of Electrochemistry	40	2.0	1	考查 Test
M04M12035	复合材料基体学 Matrix Materialogy of Composite Material	40	2.0	1	考查 Test
M04M12036	金属塑性加工的现代力学原理 Modern Mechanics Principle for Metal Plastic Forming	40	2.0	1	考查 Test
M04M12037	光谱学与光谱分析 Spectroscopy and Spectral Analysis	40	2.0	1	考查 Test
M04M12038	有机电子学 Organic Electronics	40	2.0	1	考查 Test
M04M12039	生物涂层原理与技术 Principle and Technology of Biological Coating	40	2.0	1	考查 Test

M04M12040	固体缺陷化学基础 Fundamental of Defect Chemistry of Solids	40	2.0	2	考查 Test
M04M12041	磁场下材料的分析与处理 Materials Analysis and Processing in Magnetic Fields	40	2.0	2	考查 Test
M04M12042	太阳能燃料的生成与技术 Solar energy conversion materials and technology	40	2.0	2	考查 Test
M04M12043	纳米生物材料 Nanobiotechnology	40	2.0	2	考查 Test

12. 材料加工工程（材料学院）

Materials Processing Engineering（School of Materials Science and Engineering）

学科代码（Discipline Code） **080503**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	材料热处理 Materials Heat-treatment
2	凝固技术 Solidification Processing
3	塑性成形技术 Plastic Forming
4	焊接技术 Welding Technology
5	材料设计与制备的计算机模拟 Modeling of Materials Design and Processing

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M04M12001	材料科学与工程 Materials Science and Engineering	40	2.0	2	考试 Exam
M04M12002	凝固技术 Solidification Technology	40	2.0	2	考试 Exam
M04M12003	复合材料原理 Fundamentals of Composites	40	2.0	2	考试 Exam
M04M12004	固相焊接技术 Solid-State Welding	40	2.0	2	考试 Exam
M04M12005	高温合金 Superalloys	40	2.0	2	考试 Exam
M04M12006	纳米合金 Nanoalloy	40	2.0	2	考试 Exam
M04M12007	材料的电子显微分析 Electron Microscopy and Analysis for Materials	40	2.0	2	考试 Exam
M04M12008	凝固微观组织数值模拟 Solidification Microstructure Simulation	40	2.0	2	考试 Exam
M04M12009	碳/碳复合材料 Carbon-carbon Composites	40	2.0	2	考试 Exam
M04M12010	材料物理 Materials Physics	60	3.0	2	考试 Exam
M04M12011	高温材料表面防护及涂层技术 Surface Protection and Coating Technique for High-temperature Materials	40	2.0	2	考试 Exam
M04M12012	碳材料导论 Introduction to Carbon Materials	40	2.0	2	考试 Exam
M04M12013	纳米材料与纳米技术 Nanostructured Materials and Nanotechnology	40	2.0	2	考试 Exam

M04M12014	材料计算模拟与设计 Computational Materials Modelling and Design	40	2.0	2	考试 Exam
M04M12015	半导体物理与材料特性 Physics and Materials Properties of Semiconductors	40	2.0	1	考试 Exam
M04M12016	熔体特性与熔体生长技术 Melt Characteristics and Melt Growth Techniques	40	2.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M04M12017	化学气相沉积原理 Principles of Chemical Vapor Deposition	40	2.0	2	考查 Test
M04M12018	位错理论与材料强度 Dislocations Theory and Material Strength	40	2.0	2	考查 Test
M04M12019	现代热喷涂技术 Modern Thermal Spray Technology	40	2.0	2	考查 Test
M04M12020	左手材料的光学电磁导论 Introduction to Optics and Electromagnetism in Metamaterials	40	2.0	2	考查 Test
M04M12021	轻金属及其合金的凝固加工 Solidification Processing of Light Metals and Alloys	40	2.0	2	考查 Test
M04M12022	现代焊接技术 Modern Welding Technology	40	2.0	2	考查 Test
M04M12023	第一性原理模拟 First Principles Simulation	40	2.0	2	考查 Test
M04M12024	塑性成形多尺度建模仿真 Multiscale Modeling and Simulation of Material Plastic Forming	40	2.0	2	考查 Test
M04M12025	沥青材料 Pitch Materials	40	2.0	1	考查 Test
M04M12026	新型能源材料 Advanced Energy Materials	40	2.0	2	考查 Test
M04M12027	交通智能新型碳材料 New Carbon Materials for Intelligent Transportation	40	2.0	2	考查 Test

M04M12028	晶体生长基础 Fundamental of Crystal Growth	40	2.0	1	考查 Test
M04M12029	材料的先进表征技术 Advanced Characterization Techniques of Materials	40	2.0	2	考查 Test
M04M12030	材料微结构分析与表征 Microstructure Analysis of Advanced Materials	40	2.0	1	考查 Test
M04M12031	热力学极值原理及其应用 Thermodynamic Extremal Principle and its Application	40	2.0	1	考查 Test
M04M12032	功能陶瓷导论 Introduction to Functional Ceramics	40	2.0	1	考查 Test
M04M12033	先进反应堆结构材料 Advanced Nuclear Structural Materials	40	2.0	1	考查 Test
M04M12034	电化学原理、方法与应用 Fundamentals、Measurement Methods and Applications of Electrochemistry	40	2.0	1	考查 Test
M04M12035	复合材料基体学 Matrix Materialogy of Composite Material	40	2.0	1	考查 Test
M04M12036	金属塑性加工的现代力学原理 Modern Mechanics Principle for Metal Plastic Forming	40	2.0	1	考查 Test
M04M12037	光谱学与光谱分析 Spectroscopy and Spectral Analysis	40	2.0	1	考查 Test
M04M12038	有机电子学 Organic Electronics	40	2.0	1	考查 Test
M04M12039	生物涂层原理与技术 Principle and Technology of Biological Coating	40	2.0	1	考查 Test
M04M12040	固体缺陷化学基础 Fundamental of Defect Chemistry of Solids	40	2.0	2	考查 Test
M04M12041	磁场下材料的分析与处理 Materials Analysis and Processing in Magnetic Fields	40	2.0	2	考查 Test
M04M12042	太阳能燃料的生成与技术 Solar energy conversion materials and technology	40	2.0	2	考查 Test
M04M12043	纳米生物材料 Nanobiotechnology	40	2.0	2	考查 Test

13. 机械工程（机电学院）

Mechanical Engineering（School of Mechanical Engineering）

学科代码（Discipline Code） **080200**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	航空宇航制造工程 Aeronautical and Astronautical Manu- facturing Engineering
2	微机电系统及纳米技术 MEMS and Nano Technologies
3	仿生机电及智能机器人 Biomimetic Mechatronical System and Intelligent Robotics
4	智能制造系统 Intelligent Manufacturing System
5	工业设计 Industrial Design

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M05M12001	现代数控系统 Modern CNC System	40	2.0	2	考试 Exam
M05M12002	机器人学 Robotics	40	2.0	1	考试 Exam
M05M12003	机械电子工程导论 Introduction to Mechanical and Electronic Engineering	40	2.0	2	考试 Exam
M05M12004	计算几何 Computational Geometry	40	2.0	1	考试 Exam
M05M12005	有限元与结构优化原理 Fundamental Finite Element Analysis & Structural Optimization	40	2.0	2	考查 Test
M05M12006	机械制造中的材料科学基础 Materials Science in Mechanical Manufacturing	40	2.0	1	考试 Exam
M05M12007	数控加工理论基础 Fundamental Theory of NC Machining	40	2.0	1	考试 Exam
M05M12008	热传递与热分析 Heat Transfer and Analysis	40	2.0	1	考查 Test
M05M12009	结构疲劳与断裂 Fatigue and Fracture of Structure	40	2.0	1	考试 Exam
M05M12010	纤维复合材料制造技术 Fiber reinforced Polymer Composite：Mechanics and Manufacturing	40	2.0	2	考试 Exam
M05M12011	塑性成形力学基础 Mechanics of Metal Forming	40	2.0	1	考查 Test

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M05M12012	生产运作管理理论与应用 Operation Management Theory and Its Applications	40	2.0	2	考查 Test
M05M12013	工业标识 Industrial Identification	40	2.0	1	考查 Test
M05M12014	优化理论及应用 Optimization Theory and Its Applications	40	2.0	2	考查 Test
M05M12015	增材制造原理与技术 Additive Manufacturing Theories and Technologies	40	2.0	2	考查 Test
M05M12016	现代装配技术 Advanced Assembly Technology	40	2.0	2	考试 Exam
M05M12017	光电测试技术基础 Optoelectronics Detection：Principles and Applications	40	2.0	1	考查 Test
M05M12018	复杂系统可靠性分析及应用 Reliability Analysis of Complex Systems and Applications	40	2.0	1	考查 Test
M05M12019	计划调度原理及算法 Planning and Scheduling：Theory and Algorithms	40	2.0	2	考查 Test
M05M12020	微纳机电系统 Introduction to MEMS and NEMS	40	2.0	1	考查 Test
M05M12021	塑性成形 Plastic Forming	40	2.0	1	考查 Test
M05M12022	人因工程 Ergonomics	40	2.0	1	考查 Test
M05M12023	数字化工厂技术及应用 Digital Factory Technology and Applications	40	2.0	2	考查 Test
M05M12024	自动化检测技术 Automatic Detection Technology	40	2.0	2	考查 Test
M05M12025	现代加工技术 Modern Machining Technology	40	2.0	2	考查 Test

14. 固体力学（力学与土木建筑学院）

Solid Mechanics（School of Mechanics, Civil Engineering and Architecture）

学科代码（Discipline Code） **080102**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	宏细微观力学与损伤力学 Macro Micro Mechanics and Damage Mechanics
2	先进复合材料与智能材料结构的力学行为 Mechanical Behavior of Advanced Composites and Smart Materials and Structures
3	材料力学行为及其计算机模拟 Mechanical Behavior of Material and Its Computer Simulation

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam

M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M06M12001	非线性有限元 Non-linear Finite Element Theory	40	2.0	2	考试 Exam
M06M12002	断裂力学 Fracture Mechanics	40	2.0	2	考试 Exam
M06M12003	结构的疲劳 Fatigue of Materials	40	2.0	2	考试 Exam
M06M12004	弹性力学 Elasticity Mechanics	60	3.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M06M12005	复合材料的损伤和断裂力学 Damage and Fracture Mechanics of Composite Materials	40	2.0	1	考试 Exam
M06M12006	非弹性计算力学 Computational Inelasticity	40	2.0	2	考试 Exam
M06M12007	纺织结构复合材料设计制造与应用 3D Fiber Reinforced Polymer Composites	40	2.0	2	考试 Exam
M06M12008	复合材料结构设计 Composite Engineering Design Principle	40	2.0	2	考试 Exam
M06M12009	常微分方程 Ordinary Differential Equations	40	2.0	2	考试 Exam
M06M12010	计算纳米力学 Computational Nanomechanics	40	2.0	2	考试 Exam

15. 土木工程（力学与土木建筑学院）

Civil Engineering（School of Mechanics, Civil Engineering and Architecture）

学科代码（Discipline Code） **081400**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	智能结构健康监测与评估 Smart Structure Health Monitoring and Assessment
2	工程结构设计理论及应用 Design Theory of Engineering Structure and its Application
3	建筑经济与管理 Construction Economics and Management
4	航空航天地面设施无损检测理论 Ground Facilities Nondestructive Detection Theory
5	航空航天地面设施防灾抗灾理论 Ground Facilities Disaster Prevention and Recovery Theory
6	航空航天电子设备安全性能测试理论 Avionics Security Performance Detection Theory

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M06M12001	非线性有限元 Non-linear Finite Element	40	2.0	2	考试 Exam
M06M12011	混凝土结构非线性分析 Nonlinear Analysis of Concrete Structure	40	2.0	1	考试 Exam
M06M12002	断裂力学 Fracture Mechanics	40	2.0	2	考试 Exam
M06M12012	结构动力学理论及应用 Theory and Application of Structural Dynamics	40	2.0	1	考试 Exam
M06M12013	钢结构稳定理论 Steel Stability Theory	40	2.0	1	考试 Exam
M06M12014	超高层巨型结构构造理论 Theory of High-rise Mega Texture and Structure	40	2.0	1	考试 Exam
M06M12015	钢结构高等分析理论与实用计算 Steel Structure Advanced Analysis Theory and Practical Calculation	40	2.0	2	考试 Exam
M06M12016	连续介质损伤力学 The Continuum Damage Mechanics	40	2.0	2	考试 Exam
M06M12017	材料变形与破坏的多尺度分析 Multi-scale Analysis for Deformation and Failure of the Material	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment

M06M12018	建筑结构抗震分析 Architectural Structural Earthquake Resistant Analysis	40	2.0	2	考查 Test
M06M12019	新型结构设计计算原理 Design Principles for New Type of Structure	40	2.0	2	考查 Test
M06M12020	结构振动控制技术 Structural Vibration Control Technique	40	2.0	2	考查 Test
M06M12021	高等钢结构设计 Advanced Steel Structure Design	40	2.0	2	考查 Test
M06M12022	先进传感器信号处理与模式识别 Advanced Signal Processing and Pattern Recognition	40	2.0	2	考查 Test
M06M12023	视觉感知技术及其工程应用 Visual Sensing for Civil Infrastructure Engineering	40	2.0	2	考查 Test

16. 动力工程及工程热物理（动力与能源学院）

Power Engineering and Engineering Thermophysics（School of Power and Energy）

学科代码（Discipline Code） **080700**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	工程热物理 Engineering Thermophysics
2	热能工程 Thermal Energy Engineering
3	动力机械及工程 Power Machinery and Engineering
4	流体机械及工程 Fluid Machinery and Engineering
5	风能和太阳能系统及工程 Wind &Solar Energy System Engineering

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M07M12001	机械振动 Mechanical Vibration	40	2.0	2	考试 Exam
M07M12002	转子动力学 Dynamics of Rotor	40	2.0	2	考试 Exam
M07M12003	粘性流体力学 Viscous Fluid Dynamics	40	2.0	1	考试 Exam
M07M12004	计算流体力学 Basis of Computational Fluid Dynamics	40	2.0	2	考试 Exam
M07M12005	叶轮机非定常流动基础 Unsteady Flow in Turbomachines	40	2.0	1	考试 Exam
M07M12006	高等传热学 Advanced Heat Transfer	40	2.0	1	考试 Exam
M07M12007	高等工程热力学 Theory of Advanced Engineering Thermodynamics	40	2.0	1	考试 Exam
M07M12008	航空推进系统控制 Control of Aero-propulsion System	40	2.0	2	考试 Exam
M07M12009	气动声学 Aeroacoustics	40	2.0	1	考试 Exam
M07M12010	燃烧原理 Combustion Fundamentals	40	2.0	2	考试 Exam
M07M12011	应用燃烧学 Combustion Applications	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment

M07M12012	流体机械的测试技术 Experimental Techniques of Fluid Machinery	40	2.0	1	考查 Test
M07M12013	湍流力学 Turbulence	40	2.0	2	考查 Test
M07M12014	飞机发动机电磁及红外隐身技术概论 Introduction to Aeroengine, Electromagnetic and Infrared Stealth Technique for Aircraft	40	2.0	2	考查 Test
M07M12015	飞机发动机设计 Design of Aero-engine	40	2.0	2	考查 Test
M07M12016	燃气轮机传热与冷却技术 Heat Transfer and Cooling Technology in Gas Turbine System	40	2.0	2	考查 Test
M07M12017	不可逆热力学动力学理论 Kinetic Theory and Irreversible Thermodynamics	40	2.0	2	考查 Test
M07M12018	热流体学 Thermal-Fluid Science	40	2.0	2	考查 Test
M07M12019	叶轮机气动弹性力学 Turbomachinery Unsteady Flow and Aero-elasticity	40	2.0	2	考试 Exam
M07M12020	DSMC 方法 The DSMC Method	40	2.0	2	考试 Exam
M07M12021	PIV 测量技术 Particle Image Velocimetry Measurement Technique	40	2.0	2	考查 Test
M07M12022	发动机气动热力学 Aircraft Engine Aerothermodynamics	40	2.0	2	考试 Exam
M07M12023	流体机械原理及应用 Fluid Machinery - Principles and Application	40	2.0	2	考试 Exam
M07M12024	多级轴流压气机特性预测 Performance Prediction for Multistage Axial - Flow Compressors	40	2.0	1	考试 Exam
M07M12025	先进燃气轮机燃烧室 Advanced Gas Turbine Combustor	40	2.0	2	考试 Exam
M07M12026	非定常流基本理论 Unsteady Flow	40	2.0	2	考试 Exam

17. 航空宇航科学与技术（动力与能源学院）

Aeronautical and Astronautical Science and Technology（School of Power and Energy）

学科代码(Discipline Code） **082500**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	发动机总体设计 Propulsion System Design
2	推进系统气动热力学 Thermodynamics of Propulsion System
3	叶轮机械气动热力学 Thermodynamics of Turbo Machinery
4	发动机燃烧与流动 Combustion and Flow of Propulsion System
5	传热、传质与热结构 Heat and Mass and Transfer Thermo-Stucture
6	强度、振动与可靠性 Strength, Vibration and Reliability
7	航空推进系统控制 Aero Propulsion System Control
8	测试、热工程信息处理、状态监测与故障诊断 Measurement, Thermal Engineering Information Processing, Condition Monitoring and Fault Diagnosis

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam

M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M07M12001	机械振动 Mechanical Vibration	40	2.0	2	考试 Exam
M07M12002	转子动力学 Dynamics of Rotor	40	2.0	2	考试 Exam
M07M12003	粘性流体力学 Viscous Fluid Dynamics	40	2.0	1	考试 Exam
M07M12004	计算流体力学 Basis of Computational Fluid Dynamics	40	2.0	2	考试 Exam
M07M12005	叶轮机非定常流动基础 Unsteady Flow in Turbomachines	40	2.0	1	考试 Exam
M07M12006	高等传热学 Advanced Heat Transfer	40	2.0	1	考试 Exam
M07M12007	高等工程热力学 Theory of Advanced Engineering Thermodynamics	40	2.0	1	考试 Exam
M07M12008	航空推进系统控制 Control of Aero-propulsion System	40	2.0	2	考试 Exam
M07M12009	气动声学 Aeroacoustics	40	2.0	1	考试 Exam
M07M12010	燃烧原理 Combustion Fundamentals	40	2.0	2	考试 Exam

M07M12011	应用燃烧学 Combustion Applications	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M07M12012	流体机械的测试技术 Experimental Techniques of Fluid Machinery	40	2.0	1	考查 Test
M07M12013	湍流力学 Turbulence	40	2.0	2	考查 Test
M07M12014	飞机发动机电磁及红外隐身技术概论 Introduction to Aeroengine, Electromagnetic and Infrared Stealth Technique for Aircraft	40	2.0	2	考查 Test
M07M12015	飞机发动机设计 Design of Aero-engine	40	2.0	2	考查 Test
M07M12016	燃气轮机传热与冷却技术 Heat Transfer and Cooling Technology in Gas Turbine System	40	2.0	2	考查 Test
M07M12017	不可逆热力学动力学理论 Kinetic Theory and Irreversible Thermodynamics	40	2.0	2	考查 Test
M07M12018	热流体学 Thermal-Fluid Science	40	2.0	2	考查 Test
M07M12019	叶轮机气动弹性力学 Turbomachinery Unsteady Flow and Aero-elasticity	40	2.0	2	考查 Test
M07M12020	DSMC 方法 The DSMC Method	40	2.0	2	考查 Test
M07M12021	PIV 测量技术 Particle Image Velocimetry Measurement Technique	40	2.0	2	考查 Test
M07M12022	发动机气动热力学 Aircraft Engine Aerothermodynamics	40	2.0	2	考试 Exam
M07M12023	流体机械原理及应用 Fluid Machinery - Principles and Application	40	2.0	2	考试 Exam
M07M12024	多级轴流压气机特性预测 Performance Prediction for Multistage Axial - Flow Compressors	40	2.0	1	考试 Exam

M07M12025	先进燃气轮机燃烧室 Advanced Gas Turbine Combustor	40	2.0	2	考试 Exam
M07M12026	非定常流基本理论 Unsteady Flow	40	2.0	2	考查 Test

18. 电子科学与技术（电子信息学院）

Electronics Science and Technology（School of Electronics and Information）

学科代码（Discipline Code） **080900**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	电路与系统 Electronic Circuit and System
2	电磁场与微波技术 Electromagnetic Field and Microwave Technology
3	微电子与固体电子学 Microelectronics and Solid State Electronics
4	物理电子学 Physic Electronics
5	航空电子综合技术 Integrated Avionics Technology

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M08M12001	数字图像处理 Digital Image Processing	40	2.0	2	考试 Exam
M08M12002	数据通信 Data Communication	40	2.0	2	考试 Exam
M08M12003	模式识别 Pattern Recognition	40	2.0	2	考试 Exam
M08M12004	雷达原理 Principle of Radar System	40	2.0	2	考试 Exam
M08M12005	信息论与编码 Information Theory and Coding	40	2.0	1	考试 Exam
M08M12006	高等电磁理论 Advanced Electromagnetic Theory	40	2.0	1	考试 Exam
M08M12007	计算电磁场 Computation Theory for Electromagnetic Fields	40	2.0	2	考试 Exam
M08M12008	导波理论 Theory of Guided Waves	40	2.0	2	考试 Exam
M08M12009	高等天线理论 Advanced Antenna Theory	40	2.0	2	考试 Exam
M08M12010	有源网络综合与应用 Active Network Synthesis and Application	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M08M12011	统计信号处理 Statistical Signal Processing	40	2.0	1	考试 Exam

M08M12012	数字视频处理 Digital Video Processing	40	2.0	2	考试 Exam
M08M12013	特征提取与目标识别 Feature Extraction and Target Recognition	40	2.0	1	考试 Exam
M08M12014	虚拟现实基础 Introduction to Virtual Reality	40	2.0	2	考试 Exam
M08M12015	计算机通信网络 Computer Communication Networks	40	2.0	1	考试 Exam
M08M12016	数据压缩技术及其应用 Data Compression Technology and Its Application	40	2.0	1	考试 Exam
M08M12017	阵列信号处理 Array Signal Processing	40	2.0	2	考试 Exam
M08M12018	机器学习方法及应用 Method and Application of Machine Learning	40	2.0	2	考试 Exam
M08M12019	遥感图像分析与处理 Analysis and Processing for Remote Sensing Images	40	2.0	1	考试 Exam
M08M12020	无线通信网络技术 Wireless Communication Networking Technology	40	2.0	2	考试 Exam
M08M12021	天线阵列分析与综合 Analysis and Design of Antenna Array	40	2.0	2	考试 Exam
M08M12022	电磁建模 Electromagnetic Modeling	40	2.0	2	考试 Exam
M08M12023	传输线理论 Transmission Line Theory	40	2.0	2	考试 Exam
M08M12024	微波测量 Microwave Measurements	40	2.0	1	考试 Exam
M08M12025	基于内容的视觉信息检索 Content-based Vision Information Retrieve	40	2.0	2	考试 Exam
M08M12026	海量多媒体信息检索 Large-scale Multimeida Information Retrieval	40	2.0	1	考试 Exam
M08M12027	多源信息融合 Multi-source Information Fusion	40	2.0	2	考试 Exam
M08M12028	Python 编程与工程应用 Python Programming and its Engineeringapplications	40	2.0	1	考试 Exam

M08M12029	单片机原理接口与应用 Microcontroller's Principle, Interface and Application	40	2.0	1	考试 Exam
M08M12030	扩频通信 Spread Spectrum Communications	40	2.0	1	考试 Exam
M08M12031	现代数字信号处理 Modern Digital Signal Processing	40	2.0	1	考试 Exam
M08M12032	并行目标检测与识别 Parallel Target Detection and Recognition	40	2.0	2	考试 Exam
M08M12033	数据挖掘原理 Principles of Data Mining	40	2.0	2	考试 Exam
M08M12034	飞行原理 Principles of Flight	40	2.0	1	考试 Exam
M08M12035	无人系统协同控制与优化 Unmanned Systems Cooperative Control & Optimization	40	2.0	2	考试 Exam
M08M12036	智能传感器系统 Intelligent Sensor System	40	2.0	1	考试 Exam
M08M12037	半导体器件物理 Physics of Semiconductor Devices	40	2.0	1	考试 Exam
M08M12038	模拟集成电路设计 Design of Analog Integrated Circuits	40	2.0	2	考试 Exam
M08M12039	计算机视觉 Computer Vision	40	2.0	2	考试 Exam
M08M12040	高级数字通信 Advanced Digital Communications	40	2.0	2	考试 Exam
M08M12041	FPGA/SOPC 嵌入式系统设计 FPGA/SOPC Embedded System Design	40	2.0	2	考试 Exam
M08M12042	综合航空电子系统 Integrated Avionics Systems	40	2.0	1	考试 Exam
M08M12043	座舱显控系统与工效分析 Ergonomic Analysis and Display-control System of Cockpit	40	2.0	2	考试 Exam
M08M12044	运筹学 Operational Reaseach	40	2.0	2	考试 Exam
M08M12045	微波通信系统设计 Design of Microwave Communication System	40	2.0	2	考试 Exam
M08M12048	数据融合 Data Fusion	40	2.0	2	考试 Exam
M08M12049	人工智能 Artificial Intelligence	40	2.0	2	考试 Exam

19. 信息与通信工程（电子信息学院）

Information and Communication Engineering（School of Electronics and Information）

学科代码（Discipline Code） **081000**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	信号、图像与信息处理的理论与技术 Theory and Technology for Signal, Image and Information Processing
2	传感信号与信息的获取与处理 Sensing Signal/ Information Acquisition and Processing
3	智能感知、目标识别与信息对抗 Intelligent Sensing, Target Recognition, and Information Warfare
4	通信系统理论与技术 Theory and Technology for Communication Systems
5	无线通信、多媒体通信与组网技术 Wireless Communication, Multimedia Communication and Networking Technology
6	卫星导航与定位技术 Satellite Navigation and Positioning Technology
7	工业信息化 Industrial Informatization
8	图像处理与可视化技术 Image Processing and Visualization Technology

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M08M12001	数字图像处理 Digital Image Processing	40	2.0	2	考试 Exam
M08M12002	数据通信 Data Communication	40	2.0	2	考试 Exam
M08M12003	模式识别 Pattern Recognition	40	2.0	2	考试 Exam
M08M12004	雷达原理 Principle of Radar System	40	2.0	2	考试 Exam
M08M12005	信息论与编码 Information Theory and Coding	40	2.0	1	考试 Exam
M08M12010	有源网络综合与应用 Active Network Synthesis and Application	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M08M12011	统计信号处理 Statistical Signal Processing	40	2.0	1	考试 Exam
M08M12012	数字视频处理 Digital Video Processing	40	2.0	2	考试 Exam
M08M12013	特征提取与目标识别 Feature Extraction and	40	2.0	1	考试 Exam

	Target Recognition				
M08M12014	虚拟现实基础 Introduction to Virtual Reality	40	2.0	2	考试 Exam
M08M12015	计算机通信网络 Computer Communication Networks	40	2.0	1	考试 Exam
M08M12016	数据压缩技术及其应用 Data Compression Technology and Its Application	40	2.0	1	考试 Exam
M08M12017	阵列信号处理 Array Signal Processing	40	2.0	2	考试 Exam
M08M12018	机器学习方法及应用 Method and Application of Machine Learning	40	2.0	2	考试 Exam
M08M12019	遥感图像分析与处理 Analysis and Processing of Remote Sensing Images	40	2.0	1	考试 Exam
M08M12020	无线通信网络技术 Wireless Communication Networking Technology	40	2.0	2	考试 Exam
M08M12021	天线阵列分析与综合 Analysis and Design of Antenna Array	40	2.0	2	考试 Exam
M08M12022	电磁建模 Electromagnetic Modeling	40	2.0	2	考试 Exam
M08M12025	基于内容的视觉信息检索 Content-based vision information retrieve	40	2.0	2	考试 Exam
M08M12026	海量多媒体信息检索 Large-scale Multimedia Information Retrieval	40	2.0	1	考试 Exam
M08M12027	多源信息融合 Multi-source Information Fusion	40	2.0	2	考试 Exam
M08M12028	Python 编程与工程应用 Python Programming and Its Engineering Applications	40	2.0	1	考试 Exam
M08M12029	单片机原理接口与应用 Principle, Interface and Application of Microcontrollers	40	2.0	1	考试 Exam
M08M12030	扩频通信 Spread Spectrum Communications	40	2.0	1	考试 Exam
M08M12031	现代数字信号处理 Modern Digital Signal Processing	40	2.0	1	考试 Exam

M08M12032	并行目标检测与识别 Parallel Target Detection and Recognition	40	2.0	2	考试 Exam
M08M12036	智能传感器系统 Intelligent Sensor System	40	2.0	1	考试 Exam
M08M12039	计算机视觉 Computer Vision	40	2.0	2	考试 Exam
M08M12040	高级数字通信 Advanced Digital Communications	40	2.0	2	考试 Exam
M08M12041	FPGA/SOPC 嵌入式系统设计 FPGA/SOPC Embedded System Design	40	2.0	2	考试 Exam
M08M12048	数据融合 Data Fusion	40	2.0	2	考试 Exam
M08M12049	人工智能 Artificial Intelligence	40	2.0	2	考试 Exam

20. 电气工程（自动化学院）

Electrical Engineering（School of Automation）

学科代码（Discipline Code） **080800**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field	所在学院 School
1	稀土永磁电机理论及设计 Theory and Design of Rare Earth Permanent Magnet Motor	自动化学院 School of Automation
2	现代电机控制技术 Modern Motor Control Technology	
3	独立电力系统（飞机）与特种发电技术 Independent Power System (Aircraft) and Special Power Generation Technology	
4	电力系统综合自动化 Power System Integrated Automation	
5	智能电网与新能源 Smart Grid and New Energy	
6	多电飞机电气系统 Electrical System of More Electric Aircraft	
7	现代电力电子工程 Modern Power Electronics Engineering	
8	现代电源技术 Modern Power Technology	
9	电气理论与新技术 Electrical Theory and New Technology	
10	智能信息处理与检测、控制理论 Intelligent Information Processing and Testing, Control Theory	
11	电气系统检测技术及故障诊断 Detection and Fault Diagnosis of Electrical System	
12	现代电机控制技术 Modern Motor Control Technology	航海学院 School of Marine Science and Technology
13	现代电力电子工程 Modern Power Electronics Engineering	
14	现代电源技术 Modern Power Technology	

15	现代电机控制技术 Modern Motor Control Technology	机电学院 School of Mechanical Engineering
16	电气理论与新技术 Electrical Theory and New Technology	
17	智能信息处理与检测、控制理论 Intelligent Information Processing and Testing, Control Theory	
18	电气系统检测技术及故障诊断 Detection and Fault Diagnosis of Electrical System	
19	现代电力电子工程 Modern Power Electronics Engineering	电子信息学院 School of Electronics and Information
20	智能信息处理与检测、控制理论 Intelligent Information Processing and Testing, Control Theory	

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam

M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M09M12001	线性系统理论 Linear System Theory	60	3.0	2	考试 Exam
M09M12002	计算机控制系统 Computer Control System	40	2.0	2	考试 Exam
M09M12003	智能控制理论及应用 Introduction to Intelligent Control System	40	2.0	2	考试 Exam
M09M12004	控制系统建模与仿真 Modeling and Simulation for Control System	40	2.0	2	考查 Test
M09M12005	非线性控制理论 Control Theory of Nonlinear System	40	2.0	2	考试 Exam
M09M12006	先进控制技术在电力电子中的应用 Advanced Control Theory Applied in Power Electronics and Drives	40	2.0	2	考试 Exam
M09M12007	虚拟仪器与分布式测试 Virtual Instruments and Remote Test System	40	2.0	2	考试 Exam
M09M12008	先进电力电子变换技术 Advanced Power Conversion Techniques	40	2.0	2	考试 Exam
M09M12009	电力系统计算机控制技术 Computer Control Technology for Power System	40	2.0	2	考试 Exam
M09M12010	现代控制技术 Modern Control Technology	40	2.0	2	考试 Exam
M09M12011	数字信号处理 Digital Signal Processing	60	3.0	2	考试 Exam
M09M12012	现代电源技术 Modern Power Supply Technology	40	2.0	1	考试 Exam
M09M12013	电能质量分析与控制 Power Quality Analysis and Control in Power Systems	40	2.0	2	考试 Exam

M09M12014	稀土永磁电机设计理论 Design Theory of Rare Earth Permanent Magnet (REPM) Electric Machines	40	2.0	2	考试 Exam
M09M12015	电力系统微机继电保护 Microcomputer Relay Protection in Power System	40	2.0	2	考试 Exam
M09M12016	电力电子建模与仿真 Modeling and Simulation of Power Electronics	40	2.0	1	考试 Exam
M09M12017	电驱动系统动力学分析与控制 Dynamics and Control of Electrical Drives	40	2.0	2	考试 Exam
M09M12018	电力系统控制 Power System Control	40	2.0	1	考查 Test
M09M12019	现代交流电机调速技术 Modern AC Motor Speed Control Technology	40	2.0	2	考试 Exam
M09M12020	交流电机建模及动态性能分析 Modeling and Dynamic Performance Analysis of AC Motor	40	2.0	2	考查 Test
M03M12029	电力电子技术 Power Electronics Technology	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M09M12021	电机调速及控制技术 Electric Machinery Speed Regulating and Control Technology	40	2.0	2	考试 Exam
M09M12022	特种电机原理及分析 Principle and Analysis on Special Electric Motor	40	2.0	2	考试 Exam
M09M12023	电机电磁场仿真分析 Finite Element Analysis of Electromagnetic Field in Electrical Machines	40	2.0	1	考试 Exam
M09M12024	电气传动系统实时仿真技术 Real-time Simulation Technique in Electrical Drive System	40	2.0	2	考查 Test
M09M12025	现代交流电机调速系统 Speed Adjustment Technology of Modern AC Machine	40	2.0	1	考查 Test

M09M12026	电气系统可靠性设计与分析 Reliability Design and Analysis of Electrical System	40	2.0	2	考试 Exam
M09M12027	电气系统故障诊断原理与方法 Fault Diagnosis Principle and Method of Electrical System	40	2.0	2	考查 Test
M09M12028	运动控制系统 Motion Control System	40	2.0	1	考试 Exam
M09M12029	多电飞机电力系统 More Electric Aircraft Electric Power System	40	2.0	1	考查 Test
M09M12030	智能微网能量管理 Smart Microgrid Energy Management	40	2.0	2	考查 Test
M09M12031	独立电力系统动态模拟与仿真 Modeling and Simulation of Isolated Power System	40	2.0	1	考试 Exam
M09M12032	电力系统通信 Communication in Electrical Power Systems	40	2.0	1	考查 Test
M09M12033	永磁同步与无刷直流电机驱动控制 Permanent Magnet Synchronous and Brushless DC Motor Drives	40	2.0	2	考查 Test
M09M12034	电机瞬态过程分析的 MATLAB 建模与仿真 MATLAB Modeling and Simulation Analysis of Motor Transient Process	40	2.0	1	考查 Test
M09M12035	电气微机综合自动化 The Electric Microcomputer Integrated Automation	40	2.0	2	考查 Test
M09M12036	新能源汽车技术 New Energy Electric Vehicle Technology	40	2.0	2	考试 Exam
M09M12037	控制系统抗干扰技术及其应用 Anti-jamming Technology and Application of Control System	40	2.0	2	考查 Test
M09M12038	电机故障检测与智能诊断技术 Motor Fault Detection and Intelligent Diagnosis Technology	40	2.0	2	考查 Test
M03M12046	DSP 原理及电机控制 The DSP and Motor Control	40	2.0	2	考试 Exam

21. 控制科学与工程（自动化学院）

Control Science and Engineering（School of Automation）

学科代码（Discipline Code） **081100**

一、 研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field	所在学院 School
1	控制理论与控制工程 Control Theory and Control Engineering	自动化学院 School of Automation
2	检测技术与自动化装置 Detection Technique and Automation Devices	
3	模式识别与智能系统 Pattern Recognition & Intelligent Systems	
4	导航、制导与控制 Navigation, Guidance & Control	
5	系统工程 Systems Engineering	自动化学院 School of Automation
		电子信息学院 School of Electronics and Information

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 2 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M09M12001	线性系统理论 Linear System Theory	60	3.0	2	考试 Exam
M09M12002	计算机控制系统 Computer Control System	40	2.0	2	考试 Exam
M09M12039	信号检测与估计 Detection and Estimation Theory	40	2.0	2	考试 Exam
M09M12040	最优估计理论及应用 Estimation Theory and its Applications	40	2.0	2	考试 Exam
M09M12041	飞行控制高级论题 Advanced Topics on Flight Control	40	2.0	2	考试 Exam
M09M12042	过程控制 Process Control	40	2.0	2	考试 Exam
M09M12011	数字信号处理 Digital Signal Processing	40	2.0	2	考试 Exam
M08M12034	飞行原理 Principles of Flight	40	2.0	2	考试 Exam
M08M12046	先进火力控制系统 Advanced Fire Control System	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 4 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M09M12043	移动机器人的导航、控制与遥感 Mobile Robots: Navigation Control and Remote Sensing	40	2.0	2	考试 Exam
M09M12044	控制系统可靠性分析与设计 Analysis and Design of Reliability for Control System	40	2.0	2	考试 Exam
M09M12045	飞行器系统建模与仿真 System Modeling and Simulation for Aircraft	40	2.0	2	考试 Exam
M09M12046	统计信号处理 Statistical Signal Processing	40	2.0	2	考试 Exam
M09M12047	不确定信息推理及应用 Uncertain Information Reasoning and its Application	40	2.0	2	考试 Exam
M09M12048	容错飞行控制系统 Fault-tolerance Flight Control Systems	40	2.0	2	考试 Exam
M09M12049	鲁棒控制理论及应用 Robust Control Theory and Application	40	2.0	2	考试 Exam
M09M12050	智能控制理论及其应用 Intelligent Control Theory and Its Application	40	2.0	2	考试 Exam
M09M12051	系统辨识 System Identification	40	2.0	2	考试 Exam
M09M12052	现代控制理论及工程 Modern Control Theory and Engineering	40	2.0	2	考试 Exam
M09M12053	先进控制理论及应用导论 Introduction to Advanced Control Theory and Application	40	2.0	2	考试 Exam
M09M12054	飞行控制系统设计 Flight Control System Design	40	2.0	2	考试 Exam
M09M12055	信息融合 Information Fusion	40	2.0	2	考试 Exam
M09M12056	非线性控制系统理论 Control Theory of Nonlinear System	40	2.0	2	考试 Exam
M09M12057	无人机导航与制导技术 Navigation and Guidance Technology for Unmanned Aerial Vehicles	40	2.0	2	考试 Exam

M09M12004	控制系统建模与仿真 Modelinig and Simulation of Control System	40	2.0	2	考查 Test
M08M12035	无人系统协同控制与优化 Unmanned Systems Cooperative Control & Optimization	40	2.0	2	考试 Exam
M08M12047	军事运筹学 Military Operational Research	40	2.0	2	考试 Exam
M08M12033	数据挖掘原理 Principles of Data Mining	40	2.0	2	考试 Exam

22. 计算机科学与技术（计算机学院）

Computer Science and Technology（School of Computer Science and Technology）

学科代码（Discipline Code） **081200**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	计算机系统结构 Computer Architecture
2	计算机软件与理论 Computer Software and Theory
3	计算机应用技术 Computer Application Technologies
4	网络与信息安全 Network and Information Security

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课和专业课至少 14 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 14 credits of basic specialized courses and specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam

M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课和专业课（学位必修课，在下列课程中至少选 14 学分）

Basic Specialized Courses and Specialized Courses (degree compulsory, at least 14 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M10M12002	模拟 CMOS 集成电路设计 Design of Analog CMOS Integrated Circuits	40	2.0	1	考试 Exam
M10M12004	科技论文写作 Scientific Writing	20	1.0	2	考查 Test
M10M12007	嵌入式处理器设计 Embedded Processor Design	40	2.0	2	考查 Test
M10M12008	并行计算 Parallel Computing	40	2.0	2	考试 Exam
M10M12009	算法设计与分析 Algorithms Design and Analysis	40	2.0	2	考查 Test
M10M22002	数字媒体计算技术 Digital Media Information Computing Technology	40	2.0	1	考试 Exam
M10M22003	模式分类 Pattern Classification	40	2.0	2	考试 Exam
M10M22006	数字系统设计 Design of System-on-a-Chip	40	2.0	2	考试 Exam
M10M22007	数据挖掘技术 Data Mining Techniques	40	2.0	1	考查 Test
M10M22008	计算智能 Computational Intelligence：Theory and Method	40	2.0	1	考试 Exam
M10M22009	数字语音处理 Digital Speech Processing	40	2.0	2	考查 Test
M10M22010	人工神经网络及应用 Artificial Neural Network and Its Application	40	2.0	2	考试 Exam

M10M22012	嵌入式软件设计与分析方法 Embedded Software System Design and Analysis Methodology	40	2.0	2	考试 Exam
M10M22013	信息检索理论与应用 Information Retrieval: Theory and Practice	40	2.0	1	考试 Exam
M10M22015	通信网的安全协议理论与技术 Theory and Technology of Secure Protocol in Communication Network	40	2.0	2	考试 Exam
M10M22016	实时智能系统设计 Real-time Intelligent System Design	40	2.0	1	考试 Exam
M10M22019	普适计算基础 Pervasive Computing Primer	40	2.0	1	考查 Test
M10M22020	网络科学理论与应用 Network Science: Theory and Applications	40	2.0	1	考查 Test
M10M22021	网络安全技术 Network Security Technology	40	2.0	1	考查 Test
M10M22022	SoC 设计方法学 Soc Design Methodology	40	2.0	1	考查 Test
M10M22023	计算生物学 Computational Biology	40	2.0	1	考查 Test
M10E22002	网络存储技术 Network Storage System	40	2.0	1	考试 Exam
M10E22003	高性能计算及应用 High Performance Computing	40	2.0	1	考试 Exam
M10E22004	高级操作系统设计 Advanced Operating Systems	40	2.0	2	考试 Exam
M10M22024	人机交互技术 Human-Computer Interaction	40	2.0	2	考查 Test
M10M22025	语音识别 Speech Recognition	40	2.0	2	考查 Test
M10M22026	具身性智能设计 Embodied Intelligence Design	40	2.0	1	考查 Test
M10M22027	眼动跟踪与视觉感知 Eye Tracking and Applications	40	2.0	2	考查 Test
M10M22028	QT 跨平台开发框架及程序设计 QT Cross Platform Framework Design and Programming	40	2.0	2	考查 Test

23. 基础数学（理学院）

Pure Mathematics（School of Natural and Applied Sciences）

学科代码（Discipline Code） **070101**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	微分方程 Differential Equations
2	图与组合 Graph and Combinatorics

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12005	分析学 Analysis	60	3.0	1	考试 Exam
M11G12006	代数学 Algebra	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11M12001	广义函数与 Sobolev 空间 Generalized Functions and Sobolev Spaces	60	3.0	2	考试 Exam
M11M12002	组合数学 Combinatorics	60	3.0	1	考试 Exam
M11M12003	图论及其应用 Graph Theory and Its Applications	60	3.0	1	考试 Exam
M11M12004	二阶椭圆型方程和方程组 Second-order Elliptic Equations	60	3.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11M12005	随机运筹学 Stochastic Operations Research	40	2.0	2	考试 Exam
M11M12006	代数组合 Algebraic Combination	60	3.0	2	考试 Exam
M11M12007	应用偏微分方程 Applied Partial Differential Equations	60	3.0	1	考试 Exam
M11M12008	测度论基础 Measure Theory	40	2.0	1	考试 Exam
M11M12009	数学规划 Mathematical Programming	60	3.0	2	考试 Exam
M11M12010	变分法及其应用 Variational Methods and its Application	60	3.0	2	考试 Exam

24. 计算数学（理学院）

Computational Mathematics（School of Natural and Applied Sciences）

学科代码（Discipline Code） **070102**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	有限元方法及其应用 Finite Element Methods and its Applications
2	工程设计和计算的可视化理论与技术 Visualization in Scientific Computing and Engineering Design
3	计算流体动力学 Computational Fluid Dynamics
4	数值代数与优化 Numerical Algebra and Optimization Algorithms
5	大规模科学计算与并行算法 Large-Scale Scientific Computing and Parallel Algorithms

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12005	分析学 Analysis	60	3.0	1	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11M12011	偏微分方程的有限差分法 Finite Difference Method for Solving Partial Differential Equations	60	3.0	1	考试 Exam
M11M12007	应用偏微分方程 Applied Partial Differential Equations	60	3.0	1	考试 Exam
M11M12012	算法与优化 Algorithms and Optimizations	60	3.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11M12013	偏微分方程的有限元法 Finite Element Methods for Solving Partial Differential Equations	60	3.0	2	考试 Exam
M11M12014	几何设计与几何计算 Geometric Design and Geometric Computing	60	3.0	2	考试 Exam
M11M12015	网格生成及数据可视化 Mesh Generation and its Application	40	2.0	1	考试 Exam
M11M12010	变分法及其应用 Variational Methods and its Application	60	3.0	2	考试 Exam
M11M12001	广义函数与 Sobolev 空间 Generalized Functions and Sobolev Spaces	60	3.0	2	考试 Exam
M11M12003	图论及其应用 Graph Theory and Its Application	60	3.0	1	考试 Exam

25. 应用数学（理学院）

Applied Mathematics（School of Natural and Applied Sciences）

学科代码（Discipline Code） **070104**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	非线性随机动力系统及其应用 Nonlinear and Random Dynamical Systems with Applications

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11M12016	非线性动力系统导论 An Introduction to Nonlinear Dynamical System	40	2.0	2	考试 Exam
M11M12017	随机动力系统导论 An introduction to Stochastic Dynamical Systems	40	2.0	1	考试 Exam
M11M12018	应用随机微分方程 Applied Stochastic Differential Equations	40	2.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11M12008	测度论基础 Measure Theory	40	2.0	1	考试 Exam
M11M12019	高等数理统计 Advanced Statistics	60	3.0	1	考试 Exam
M11M12020	多元统计分析 Multivariate Statistical Analysis	60	3.0	1	考试 Exam

26. 运筹学与控制论（理学院）

Operational Research and Cybernetics（School of Natural and Applied Sciences）

学科代码（Discipline Code） **070105**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	图的控制数 Domination Number of Graphs
2	复杂网络 Complex Networks
3	系统生物学 System Biology
4	合作博弈及其应用 Cooperative Game Theory and Its Application
5	非合作博弈及其应用 Non-Cooperative Game Theory and Its Application
6	演化博弈 Evolutionary Game Theory

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11G12005	分析学 Functional Analysis	60	3.0	1	考试 Exam
M11G12006	代数学 Algebra	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11M12003	图论及其应用 Graph Theory with Applications	60	3.0	1	考试 Exam
M11M12021	博弈论基础 Game Theory	60	3.0	1	考试 Exam
M11M12022	最优化原理与方法 Optimization Theory and Method	60	3.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M11M12005	随机运筹学 Stochastic Operations Research	40	2.0	2	考试 Exam
M11M12002	组合数学 Combinatorial Mathematics	60	3.0	1	考试 Exam
M11M12006	代数组合 Algebraic Combination	40	2.0	2	考试 Exam
M11M12009	数学规划 Mathematical Programming	60	3.0	2	考试 Exam
M11M12023	博弈论与信息经济学 Games Theory and Information Economics	40	2.0	2	考试 Exam
M11M12024	演化博弈论 Evolutional Games Theory	40	2.0	1	考试 Exam

27. 光学工程（理学院）

Optical Engineering（School of Natural and Applied Sciences）

学科代码（Discipline Code） **080300**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	光信息技术与系统 Optical Information Technology and Systems
2	光子技术及器件 Photonic Technology and Devices
3	光纤传感技术 Optical Fiber Sensing Technology
4	光电测试与检测技术 Optical Testing and Metrology
5	薄膜光电材料与器件 Thin-film Photoelectric Materials and Devices
6	光电信息功能器件 Optical Information Functional Devices

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11M12025	光电子技术 Optoelectronic Technology	60	3.0	1	考试 Exam
M11M12026	高等光学 Advanced Optics	60	3.0	1	考试 Exam
M11M12027	非线性光学 Nonlinear Optics	40	2.0	1	考试 Exam
M11M12028	微纳光子学理论与技术 Theory and Technology of Nanophotonics	40	2.0	2	考试 Exam
M11M12029	激光物理学 Laser Physics	40	2.0	1	考试 Exam
M11M12030	高等量子力学 Advanced Quantum Mechanics	40	2.0	1	考试 Exam
M11M12031	电介质材料导论 Introduction to Dielectric Materials	40	2.0	1	考试 Exam
M11M12032	表面物理 Surface Physics	40	2.0	2	考试 Exam
M11M12033	分形与分维 Fractal and Fractal Dimension	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11M12034	光纤光学与技术 Fiber Optics and Technology	40	2.0	1	考试 Exam
M11M12035	数字全息术导论 Introduction to Digital Holography	40	2.0	2	考试 Exam
M11M12036	光纤传感原理及应用 Principles of Optical Fiber Sensors and Their Applications	40	2.0	2	考试 Exam
M11M12037	计算光子学 Computational Photonics	40	2.0	2	考试 Exam
M11M12038	超快光子学基础 Fundamentals of Ultrafast Photonics	40	2.0	2	考试 Exam
M11M12039	奇异光学导论 Introduction to Singular Optics	40	2.0	1	考试 Exam
M11M12040	光学全息及信息处理 Optical Holography and Information Processing	40	2.0	1	考试 Exam
M11M12041	光电子材料 Photoelectronic Materials	40	2.0	2	考试 Exam
M11M12042	薄膜物理学 Thin Film Physics	40	2.0	2	考试 Exam
M11M12043	晶体物理学 Crystal Physics	40	2.0	1	考试 Exam
M11M12044	微波激励与测试技术 Microwave Excitation and Testing Technique	40	2.0	2	考试 Exam

28. 材料物理与化学（理学院）

Materials Physics and Chemistry（School of Natural and Applied Sciences）

学科代码（Discipline Code） **080501**

一、 研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	空间材料科学 Space Materials Science
2	智能材料物理与化学 Smart Materials Physics and Chemistry
3	材料化学 Materials Chemistry
4	薄膜及低维材料物理 Thin Film and Low Dimensional Materials Physics
5	功能材料物理 Functional Materials Physics
6	高分子材料化学与物理 Polymeric Materials Physics and Chemistry

二、课程设置 （Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11M12042	薄膜物理学 Thin Film Physics	40	2.0	2	考试 Exam
M11M12046	空间材料科学导论 Introduction to Space Material Science	40	2.0	1	考试 Exam
M11M12047	材料动力学 Kinetics of Materials	40	2.0	1	考试 Exam
M11M12049	智能材料导论 An Introduction to Smart Materials	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11M12045	液态金属物理 Physics of Liquid Metals	40	2.0	1	考试 Exam
M11M12048	液固相变原理 Fundamentals of Liquid-Solid Phase Transition	40	2.0	1	考试 Exam
M11M12032	表面物理 Surface Physics	40	2.0	2	考试 Exam
M11M12050	晶体生长理论与技术 Theory and Technology of Crystal Growth	40	2.0	1	考试 Exam

M11M12051	纳米材料物理 Nanomaterials Physics	40	2.0	2	考试 Exam
M11M12052	智能材料结构与化学设计 Sructure of Smart Materials and its Chemical Design	40	2.0	2	考试 Exam

29. 管理科学与工程（管理学院）

Management Science and Engineering（School of Management）

学科代码（Discipline Code） **120100**

一、 研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	管理系统工程 Management System Engineering
2	信息管理与信息系统 Information Management and Information System
3	管理优化与决策支持 Management Optimization and Decision Support
4	工业工程 Industrial Engineering
5	项目管理 Project Management

二、 课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam
M12G12001	应用统计学 I Applied Statistics I	36	2.0	1	考试 Exam
M12G12002	运筹学 Operational Research	60	3.0	1	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M12M12006	质量管理 Quality Management	36	2.0	2	考试 Exam
M12M12012	管理研究方法与 STATA 应用 Research Methodology in Management and Application of STATA	36	2.0	1	考试 Exam
M12M12013	生产与运作管理 Production and Operations Management	36	2.0	1	考试 Exam
M12M12014	工程经济学 Engineering Economy	36	2.0	1	考试 Exam
M12M12015	数据、模型与决策 Data Analysis, Modeling and Decision Making	36	2.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M12M12011	项目管理 Project Management	36	2.0	2	考试 Exam
M12M12016	战略管理 Strategic Management	36	2.0	2	考试 Exam
M12M12018	创新管理 Innovation Management	36	2.0	1	考试 Exam

M12M12019	物流与供应链管理 Logistics and Supply Chain Management	36	2.0	2	考试 Exam
M12M12020	服务管理 Service Management	36	2.0	1	考试 Exam
M12M12021	商业智能与决策 Business Intelligence Modelling and Decision Making	36	2.0	2	考试 Exam
M12M12022	产品设计与开发管理 Management of Product Design and Development	36	2.0	2	考试 Exam

30. 工商管理（管理学院）

Business Administration（School of Management）

学科代码（Discipline Code） **120200**

一、 研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	企业管理 Business Management
2	会计学 Accounting
3	技术经济及管理 Technology Economy and Management

二、课程设置 （Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 Ⅰ Chinese Language Ⅰ	60	3.0	1	考试 Exam
M26G11002	汉语语言 Ⅱ Chinese Language Ⅱ	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic theory courses (degree required courses, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam

M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam
M12G12001	应用统计学 I Applied Statistics I	36	2.0	1	考试 Exam
M12G12002	运筹学 Operational Research	60	3.0	1	考试 Exam
M12G12003	微宏观经济学 Micro - Macroeconomics	60	3.0	1	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M12M12001	组织行为学 Organizational Behavior	36	2.0	1	考试 Exam
M12M12005	管理经济学 Managerial Economics	36	2.0	1	考试 Exam
M12M12012	管理研究方法与 STATA 应用 Research Methodology in Management and Application of STATA	36	2.0	1	考试 Exam
M12M12016	战略管理 Strategic Management	36	2.0	2	考试 Exam
M12M12017	会计学 Accounting	36	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M12M12010	人力资源管理 Human Resources Management	36	2.0	2	考试 Exam
M12M12011	项目管理 Project Management	36	2.0	2	考试 Exam
M12M12013	生产与运作管理 Production and Operations Management	36	2.0	1	考试 Exam
M12M12018	创新管理 Innovation Management	36	2.0	1	考试 Exam
M12M12019	物流与供应链管理 Logistics and Supply Chain	36	2.0	2	考试 Exam

	Management				
M12M12023	营销管理 Marketing Management	36	2.0	2	考试 Exam
M12M12024	管理沟通 Management Communication	36	2.0	2	考试 Exam

31. 应用经济学（人文与经法学院）

Applied Economics（School of Humanities, Economicsand Law）

学科代码（Discipline Code） **020200**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	区域经济理论与实践 Regional Economics and Practice
2	产业经济理论与实践 Industrial Economics and Practice
3	金融理论与实践 Financial Theory and Practice

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M13G12001	微宏观经济学 Macro and Micro Economics	60	3.0	1	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M13M12001	产业经济学 Industry Economics	40	2.0	1	考试 Exam
M13M12002	区域经济学 Regional Economics	40	2.0	2	考试 Exam
M13M12003	货币金融学 Economics of Money and Financial Markets	40	2.0	1	考试 Exam
M13M12004	经济学实证研究方法 Empirical Research Method in Economics	40	2.0	1	考试 Exam
M13M12005	国际经济法 International Economic Law	40	2.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M13M12006	产业组织学 Industrial Organization Technology	40	2.0	2	考试 Exam
M13M12007	产业经济学前沿问题专题 Cutting-edge Problems of Industrial Economics	40	2.0	2	考试 Exam
M13M12008	国际服务贸易 International Trade in Services	40	2.0	2	考试 Exam
M13M12009	电子商务研究 Electronic Commerce Research	40	2.0	2	考试 Exam
M13M12010	国际经济前沿问题 The Frontier Questions of International Economics	40	2.0	2	考试 Exam
M13M12011	国际商务 International Business	40	2.0	2	考试 Exam
M13M12012	公司法 Corporation Law	40	2.0	2	考试 Exam
M13M12013	金融法 Financial Law	40	2.0	2	考试 Exam
M13M12014	世界经济 The World Economy	40	2.0	1	考试 Exam

32. 软件工程（软件与微电子学院）

Software Engineering（School of Software and Microelectronics）

学科代码（Discipline Code） **083500**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	软件工程过程与方法 Software Engineering Process and Method
2	领域软件工程 Domain Software Engineering
3	数字媒体及其软件技术 Digital Media and Software Technology
4	服务工程与信息化 Service Engineering and Informationalization

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam

M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M14M12001	软件项目管理与组织 Software Project Management and Organization	54	3.0	1	考试 Exam
M14M12002	数据库系统原理与实现 Database System Principles and Implementation	54	3.0	1	考试 Exam
M14M12003	面向对象分析与设计 Object-Oriented Analysis and Design	40	2.0	1	考试 Exam
M14M12004	软件产品线 Software Product Line	40	2.0	1	考试 Exam
M14M12005	程序设计语言理论 Programming Language Theory	40	2.0	2	考查 Test
M14M12014	.NET 编程及网络软件 .NET Programming and Software Networks	54	3	1	考查 Test
M14M12018	软件质量保证的形式化工程方法 Formal Engineering Methods for Software Quality Assurance	20	1	2	考查 Test

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M14M12006	云计算 Cloud Computing	40	2.0	2	考试 Exam
M14M12007	虚拟现实技术 Virtual Reality Technology and Application	54	3.0	1	考试 Exam
M14M12008	网络与信息安全 Network and Information Security	40	2.0	1	考试 Exam

M14M12009	软件体系结构设计 Software Architecture Design	40	2.0	2	考试 Exam
M14M12010	软件测试 Software Testing	54	3.0	2	考试 Exam
M14M12011	商业智能 Business Intelligence	54	3.0	2	考试 Exam
M14M12012	安卓应用开发与编程 Android Application Development & Programming	40	2.0	2	考试 Exam
M14M12013	Swift 编程语言 Swift Programming Language	40	2.0	1	考试 Exam
M14M12019	大数据技术基础 Big Data Fundermental	40	2.0	1	考查 Test
M14M12020	机器学习 Machine Learning	40	2.0	2	考查 Test

33. 生物学（生命学院）

Biology（School of Life Sciences）

学科代码（Discipline Code） **071000**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	生理学 Physiology
2	微生物学 Microbiology
3	生物化学 Biochemistry
4	生物物理学 Biophysics
5	细胞生物学 Cell Biology

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M15M12001	空间生物学与空间生物技术 Space Biology and Space Biotechnology	40	2.0	1	考试 Exam
M15M12002	骨基础生物学 Basic Bone Biology	40	2.0	1	考试 Exam
M15M12003	生物信息学 Bioinformatics	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M15M12004	蛋白质结晶方法学 Protein Crystallization Methodology	40	2.0	2	考试 Exam
M15M12005	骨生物学研究技术 Bone Research Protocol	40	2.0	2	考试 Exam
M15M12006	结构生物学 Structural Biology	40	2.0	1	考试 Exam
M15M12007	生物力学基础 Fundamentals of Biomechanics	40	2.0	1	考试 Exam
M15M12008	生物材料 Biomaterials	40	2.0	2	考试 Exam
M15M12009	高等生物化学 Advanced Biochemistry	40	2.0	2	考试 Exam
M15M12010	分子药理学 Molecular Pharmacology	40	2.0	2	考试 Exam

34. 生物医学工程（生命学院）

Biomedical Engineering（School of Life Sciences）

学科代码（Discipline Code） **083100**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	空间生物技术与工程与生物力学 Space Biotechnology and Engineering and Biomechanics
2	生物电磁技术 Biological Electromagnetic Technology
3	蛋白质工程 Protein Engineering
4	航天医学仪器与航天医学工程 Space Medico-engineering and Instrumentation
5	生物医学材料 Biomedical Materials

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment

M11G12001	矩阵论 Matrix Theory	60	3.0	1	考试 Exam
M11G12002	数值分析 Numerical Analysis	60	3.0	1	考试 Exam
M11G12003	数理统计 Mathematical Statistics	60	3.0	1	考试 Exam
M11G12004	随机过程 Stochastic Process	40	2.0	2	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M15M12001	空间生物学与空间生物技术 Space Biology and Space Biotechnology	40	2.0	1	考试 Exam
M15M12002	骨基础生物学 Basic Bone Biology	40	2.0	1	考试 Exam
M15M12003	生物信息学 Bioinformatics	40	2.0	2	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M15M12004	蛋白质结晶方法学 Protein Crystallization Methodology	40	2.0	2	考试 Exam
M15M12005	骨生物学研究技术 Bone Research Protocol	40	2.0	2	考试 Exam
M15M12006	结构生物学 Structural Biology	40	2.0	1	考试 Exam
M15M12007	生物力学基础 Fundamentals of Biomechanics	40	2.0	1	考试 Exam
M15M12008	生物材料 Biomaterials	40	2.0	2	考试 Exam
M15M12009	高等生物化学 Advanced Biochemistry	40	2.0	2	考试 Exam
M15M12010	分子药理学 Molecular Pharmacology	40	2.0	2	考试 Exam

35. 英语语言文学（外国语学院）

English Language and Literature（School of Foreign Languages）

学科代码（Discipline Code） **050201**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	语言学 Linguistics
2	英国文学 British Literature
3	美国文学 American Literature

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M16G12001	文学研究导论 Introduction to Literature	20	1.0	1	考试 Exam
M16G12002	普通语言学 General Linguistics	40	2.0	1	考试 Exam

M16G12003	应用语言学研究方法 Research Methods in Applied Linguistics	40	2.0	3	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M16M12001	社会语言学 Sociolinguistics	40	2.0	2	考试 Exam
M16M12002	语义学 Semantics	40	2.0	1	考试 Exam
M16M12003	中西方翻译理论史 History of Translation Theory in the West & in China	40	2.0	1	考试 Exam
M16M12004	语用学 Pragmatics	40	2.0	2	考试 Exam
M16M12005	20 世纪西方学术思潮概论 An Introduction to Western Academic Ideological Trend in 20th Century	40	2.0	1	考试 Exam
M16M12006	西方社会文化 Overview of Western Culture	40	2.0	2	考试 Exam
M16M12007	英美文学选读 Selected Readings in British and American English	40	2.0	1	考试 Exam
M16M12008	西方文学理论选读 Selected Readings in Literary Criticism	40	2.0	2	考试 Exam
M16M12043	英语语音学与音系学概论 Introduction to English Phonetics and Phonology	40	2.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M16M22009	翻译理论与实践 Translation Theories and Practice	40	2.0	1	考试 Exam
M16M22010	对比语言学 Contrastive Linguistics	40	2.0	2	考试 Exam
M16M22011	认知语言学 Cognitive Linguistics	40	2.0	2	考试 Exam

M16M22012	文学翻译研究与实践对比 Literary Translation Theories and Practice	40	2.0	2	考试 Exam
M16M22013	莎士比亚戏剧选读 Shakespeare’s Plays	40	2.0	3	考试 Exam
M16M22014	十四行诗欣赏 English Sonnets	40	2.0	3	考试 Exam
M16M22015	语篇翻译导论 An Introduction to Text Translation	40	2.0	1	考试 Exam
M16M22028	篇章语言学 Discourse Linguistics	40	2.0	2	考试 Exam
M16M12044	语料库语言学 Corpus Linguistics	40	2.0	2	考试 Exam
M16G22004	论文写作 Advanced Writing	20	1.0	3	考查 Test

36. 外国语言学及应用语言学（外国语学院）

Foreign Linguistics and Applied Linguistics（School of Foreign Languages）

学科代码（Discipline Code） **050211**

一、研究方向（Research Field）

序号 No.	主要研究方向 Main Research Field
1	语言学 Linguistics
2	应用语言学 Applied Linguistics
3	翻译研究 Translation Studies

二、课程设置（Curriculum Provision）

至少取得 27 学分，其中：公共课 8 学分，基础理论课至少 5 学分，专业基础课至少 6 学分，专业课至少 8 学分。

At least 27 credits, including 8 credits of public courses, at least 5 credits of basic theory courses, at least 6 credits of basic specialized courses and at least 8 credits of specialized courses.

1．公共课（学位必修课，8 学分）

Public Courses (degree compulsory, 8 credits)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M26G11001	汉语语言 I Chinese Language I	60	3.0	1	考试 Exam
M26G11002	汉语语言 II Chinese Language II	60	3.0	2	考试 Exam
M26G12001	中国概况 Brief Introduction of China	40	2.0	1	考试 Exam

2．基础理论课（学位必修课，在下列课程中至少选 5 学分）

Basic Theory Courses (degree compulsory, at least 5 credits, selected from the following courses)

课程编号 Course Code	课程名称 Course Name	学时 Learning Hour	学分 Credit	开课学期 Learning Semester	考核方式 Assessment
M16G12001	文学研究导论 Introduction to Literature	20	1.0	1	考试 Exam
M16G12002	普通语言学 General Linguistics	40	2.0	1	考试 Exam

M16G12003	应用语言学研究方法 Research Methods in Applied Linguistics	40	2.0	3	考试 Exam

3．专业基础课（学位必修课，在下列课程中至少选 6 学分）

Basic Specialized Courses (degree compulsory, at least 6 credits, selected from the following courses)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M16M12016	理论语言学 Theoretical Linguistics	40	2.0	1	考试 Exam
M16M12001	社会语言学 Sociolinguistics	40	2.0	2	考试 Exam
M16M12002	语义学 Semantics	40	2.0	1	考试 Exam
M16M12003	中西方翻译理论史 History of Translation Theory in the West & in China	40	2.0	1	考试 Exam
M16M12004	语用学 Pragmatics	40	2.0	2	考试 Exam
M16M12017	外语研究中的统计学 Research Design and Statistics for Applied Linguistics	40	2.0	3	考试 Exam
M16M12018	第二语言习得与应用 Second Language Acquisition and its Application	40	2.0	2	考试 Exam
M16M12019	翻译学概论 Basics of Translation Studies	40	2.0	2	考试 Exam
M16M12005	20 世纪西方学术思潮概论 An Introduction to Western Academic Ideological Trend in 20th Century	40	2.0	1	考试 Exam
M16M12006	西方社会文化 Overview of Western Culture	40	2.0	2	考试 Exam
M16M12043	英语语音学与音系学概论 Introduction to English Phonetics and Phonology	40	2.0	1	考试 Exam

4．专业课（学位选修课，至少选 8 学分）

Specialized Courses (degree elective, at least 8 credits)

课程编号 Course Code	**课程名称** Course Name	**学时** Learning Hour	**学分** Credit	**开课学期** Learning Semester	**考核方式** Assessment
M16M22020	英语测试学 English Language Testing	40	2.0	2	考试 Exam

M16M22021	专门用途英语概论 A Survey of English for Specific Purposes	40	2.0	1	考试 Exam
M16M22022	文体学 Stylistics	40	2.0	1	考试 Exam
M16M22009	翻译理论与实践 Translation Theories and Practice	40	2.0	1	考试 Exam
M16M22010	对比语言学 Contrastive Linguistics	40	2.0	2	考试 Exam
M16M22011	认知语言学 Cognitive Linguistics	40	2.0	2	考试 Exam
M16M12023	多媒体与现代语言教学 Multimedia in Modern Language Teaching and Learning	40	2.0	1	考试 Exam
M16M12024	心理语言学 Psycholinguistics	40	2.0	1	考试 Exam
M16M12025	句法语料库 Corpus Linguistics	40	2.0	2	考试 Exam
M16M12026	经济分析语言学 An Economic Analysis of Linguistics	40	2.0	2	考试 Exam
M16M12027	计算语言学 Computational Linguistics	40	2.0	2	考试 Exam
M16M22028	篇章语言学 Discourse Linguistics	40	2.0	2	考试 Exam
M16M12044	语料库语言学 Corpus Linguistics	40	2.0	2	考试 Exam
M16G22004	论文写作 Advanced Writing	20	1.0	3	考查 Test