

机械工程学院 车辆工程专业 2021级 培养方案

1. 专业介绍

西南交通大学车辆工程专业致力于培养能够出色地解决车辆工程领域复杂工程问题的优秀高级工程技术人才。

本专业起源于唐山路矿学堂（交通大学前身）1919年建立的机器科，1949年首次单独招生。为了适应国家战略与经济社会发展的需要，专业先后随学校经历了从唐山到峨眉，最后定居成都的多次搬迁，各专业方向也经过了多次重大的调整。当前车辆工程专业分为机车与动车工程、铁道车辆、城市轨道交通车辆与汽车工程等四个专业方向。

本专业的发展具有多次重要里程碑，主要包括，1986年“机车车辆”获得国家第一批博士学位授予权，1988年“机车车辆”被列为全国高等学校重点学科，1993年增设“汽车工程”，2001年增设“城市轨道交通车辆”方向，2002年机车、铁道车辆、城市轨道交通车辆和汽车工程四个专业方向组成车辆工程专业，2006年车辆工程专业被评为四川省品牌专业，2007年车辆工程被评为国家特色专业，2011年车辆工程获批卓越工程师计划项目试点专业，2018年第2次通过工程教育专业认证（有效期6年），学历国际互认。

专业全面服务“交通强国”、“一带一路”等国家战略，依托牵引动力国家重点实验室与机车车辆研究中心双科研平台，机车车辆实验中心、国家工科教学基地、国家实验教学示范中心等优质教学实验平台，以院士、长江学者、教学名师为代表的高水平师资队伍，以及精品课程与在线开放课程等优质教学资源，培养学生出色的专业能力。专业自建立以来，累计培养了万余名优秀的汽车、铁路机车、铁道车辆、动车组、城市轨道交通车辆高级工程技术人才，毕业生成为车辆行业的中流砥柱。

The vehicle engineering in Southwest Jiaotong University is dedicated to cultivate the outstanding engineers who can solve complex engineering problems in the vehicle industry. This major initially originated from the mechanic department of Tangshan Institute of Railway in 1919, and started to recruit student independently in 1949. In order to adapt to the needs of national strategy and economic and social development, it experienced several relocations from Tangshan to Emei, and finally settled in Chengdu. This major also has undergone several adjustments. The current vehicle engineering thus consists of four different specializations, such as locomotive and EMU engineering, railway vehicle, urban rail transit vehicle and automotive engineering.

The development of this major also experienced several important milestones. In 1986 the “locomotive vehicle” became the first group of doctoral-level subject and obtained the right to award doctoral degree. In 1988, the “locomotive vehicle” was listed as the National Key Subject. In 1993 and 2001, two specializations, including “automobile engineering specialization” and “urban rail transit vehicle specialization”, were established respectively. In 2002, four specializations including locomotive, railway vehicle, urban rail transit vehicle and automotive engineering were further combined to formulate the major of vehicle engineering. This major was continuously awarded the Sichuan Brand Major and National Characteristic Major in 2006 and 2011. In 2011, the vehicle engineering was approved as a pilot project for the Excellence Engineer Program. Moreover, this major successfully passed the professional certification in engineering for second time in 2018 (valid for 6 years), which enables international mutual accreditation of educational qualifications.

This major is aimed at serving “Country with Strong Transportation” and “One Belt, One Road” and other national strategies. It also owns huge supports from a set of national research centers, such as the State Key

Laboratory of Traction Power, the Research Center of Locomotive and Vehicle, the Locomotive and Vehicle Experimental Center, the National Engineering Teaching Base, the National Experimental Teaching Demonstration Center. Besides, the major also have high-level teaching staffs represented by academicians, Yangtze River Scholars, and famous teachers, as well as high-quality teaching resources such as excellent courses and online open courses, which enable us to cultivate excellent students who have outstanding professional ability. Since its establishment, this major has graduated more than ten thousand excellent students, who have become the mainstay of vehicle industry in China.

专业代码: 080207

Program Code: 080207

专业名称: 车辆工程

Program Name: Vehicle Engineering

2. 培养目标

本专业培养国家交通装备战略与发展所需要的, 具有科学素养和人文情怀, 具有历史眼光和国际化视野, 能够提出并解决带有挑战性的专业问题的, 职业操守与自我发展融合的, 德、智、体、美、劳全面发展的车辆工程创新型高级专门人才。

毕业生经过五年左右全面的专业实践与深造, 获得完整的职业能力, 在专业知识与能力、沟通交流与管理能力、职业和专业素养、学习与发展能力等方面都取得卓越的成就, 职业与专业成就得到领域专家的普遍认同。毕业生成为研发设计与制造领域、运用维修与技术管理领域的优秀工程师, 特别优秀的毕业生具备成为本领域技术专家、技术领军人才或学术精英的能力。具体包括:

培养目标1: 具备独立提出车辆工程领域复杂工程问题合理解决方案、并运用现代设计分析工具实施方案设计与分析的能力, 能够出色地完成车辆工程师岗位的专业技术工作。

培养目标2: 具备针对车辆工程领域技术发展趋势提出创新研究方案的能力, 能够实施科学与实验研究。

培养目标3: 具备深厚的科学素养和人文情怀, 具有历史眼光和国际化视野, 胜任国际国内的交流与合作。

培养目标4: 具备全面的工程组织管理与团队合作能力, 胜任指导或领导小型团队解决车辆工程领域复杂工程问题的工作。

培养目标5: 具备优良的职业操守, 并与自身发展相融合, 通过专业实践与深造不断提升自我。

According to the development needs of national transportation equipment, the objective of this major is to cultivate high-level specialized personnel in vehicle engineering who are characterized by all-round development in terms of morality, intelligence, physics and so on. These students will be equipped with scientific literacy and humanistic feelings, as well as historical perspectives and international visions, and be able to propose and solve challenging professional problems.

Graduates have undergone comprehensive professional practice and further study for about five years, it is expected that the graduates can acquire completed professional abilities and achieve outstanding achievements in professional knowledge and abilities, communication and management skills, professional literacy, as well as learning and development abilities. Graduates will be best engineers in the field of R&D and manufacturing, and the field of maintenance and technical management. Some outstanding graduates will be able to become domain experts, engineering leaders or academic elites in this field. Specifically including:

Cultivate Objective 1: With the ability to independently propose a reasonable solution to complex engineering problems in the field of vehicle engineering, and can use modern design analysis tools in the procedure of project implementation, as well as be able to excellently complete the technological work in vehicle engineers.

Cultivate Objective 2: With the ability to propose innovative research solutions in vehicle engineering, and can implement scientific and experimental research.

Cultivate Objective 3: With profound scientific literacy and humanistic feelings, as well as historical- and international vision, and can serve as an important role in the international and domestic communication and cooperation.

Cultivate Objective 4: With comprehensive engineering management and teamwork abilities, and can lead teammates to solve complex engineering problems in vehicle engineering.

Cultivate Objective 5: With excellent professional ethics integrating with their own development, and can continuously improve themselves through professional practices and advanced studies.

3. 专业毕业要求

本专业学生在毕业时要求具有良好的科学与人文素养以及创新意识；深厚的数学与自然科学基础知识、工程基础知识及车辆工程专业知识；能够基于深入的科学与工程原理提出机车与动车工程、铁道车辆、城市轨道交通车辆、汽车工程等某一专业方向复杂车辆工程问题的解决方案，并能够针对社会、健康、安全、法律、文化以及环境等多种制约因素对其进行合理性评价，获得有效结论并进行方案选择；能够设计与实施科学或技术实验，通过数据分析与综合获得有效结论；有较好的人际沟通能力与团队合作能力，对行业标准、工程师职业规范与社会责任有深入理解，具有自我学习提高与发展的能力。具体包括：

毕业要求1—工程知识：能够将数学、自然科学、工程基础和专业知用于解决车辆工程领域复杂工程问题。

毕业要求2—问题分析：能够应用数学、自然科学和工程科学的基本原理，识别、表达、并通过文献研究分析车辆工程领域复杂工程问题，以获得有效结论。

毕业要求3—设计/开发解决方案：能够设计针对车辆工程领域复杂工程问题的解决方案，设计满足车辆工程领域需求的系统、单元（部件）或工艺流程，并能够在设计环节中体现创新意识，考虑社会、健康、安全、法律、文化以及环境等因素。

毕业要求4—研究：能够基于科学原理并采用科学方法对车辆工程领域复杂工程问题进行研究，包括设计实验、分析与解释数据、并通过信息综合得到合理有效的结论。

毕业要求5—使用现代工具：能够针对车辆工程领域复杂工程问题，开发、选择与使用恰当的技术、资源、现代工程工具和信息

技术工具，包括对车辆工程领域复杂工程问题的预测与模拟，并能够理解其局限性。

毕业要求6—工程与社会：能够基于工程相关背景知识进行合理分析，评价车辆工程专业领域工程实践和车辆工程专业领域复杂工程问题解决方案对社会、健康、安全、法律以及文化的影响，并理解应承担的责任。

毕业要求7—环境和可持续发展：能够理解和评价针对车辆工程领域复杂工程问题的工程实践对环境、社会与可持续发展的影响。

毕业要求8—职业规范：具有人文社会科学素养、社会责任感，能够在车辆工程领域的工程实践中理解并遵守工程职业道德和规范，履行责任。

毕业要求9—个人和团队：能够在多学科背景下的团队中承担个体、团队成员以及负责人的角色。

毕业要求10—沟通：能够就车辆工程领域复杂工程问题与业界同行及社会公众进行有效沟通和交流，包括撰写报告和设计文稿、陈述发言、清晰表达或回应指令。并具备一定的国际视野，能够在跨文化背景下进行沟通和交流。

毕业要求11—项目管理：理解并掌握车辆工程领域的工程管理原理与经济决策方法，并能在多学科环境中应用。

毕业要求12—终身学习：具有自主学习和终身学习的意识，有不断学习和适应发展的能力。

The graduates of this major are required to be equipped with scientific and humanistic literacy as well as innovative consciousness, comprehensive fundamental knowledge in mathematics and natural sciences, engineering and vehicle engineering, who can propose reasonable solutions to the complex engineering problems in locomotive and high-speed EMU, railway vehicle, urban rail transit vehicle and automotive engineering. The students should also take into account the constraints from the society, health, safety, legislation, culture, and environment in the engineering projects, and be able to design and implement scientific or technical experiments so as to obtain effective conclusions through comprehensive data analysis. Moreover, the students should be equipped with good interpersonal communication and teamwork skills, and understand industry standards, engineer professional norms and social responsibility, as well as the ability to improve and develop their self-learning abilities. Such as:

Graduation Requirement 1—Engineering Knowledge: apply mathematics, natural sciences, engineering fundamentals and expertise to solve complex engineering problems in the field of vehicle engineering.

Graduation Requirement 2—Question and Analysis: employ the basic principles of mathematics, natural science and engineering science to identify, express, and analyze complex engineering problems in the field of vehicle engineering so as to obtain effective conclusions.

Graduation Requirement 3—Design/Develop Solutions: ability to propose solutions for complex engineering problems in the field of vehicle engineering, and can design technological process for the whole system or single component for vehicle industry, as well as can put innovation in the design process considering effects of society, health, safety, legal, cultural and environment.

Graduation Requirement 4—Research: study complex engineering problems in the field of vehicle engineering based on scientific principles, including designing experiments, data analysis as well as information fusion,

so as to obtain reasonable and effective conclusions.

Graduation Requirement 5—Modern Analysis Tool: ability to develop, choose, and use the reasonable methodologies for the complex engineering problems in vehicle industry, including resource, modern engineering tool and information technique tool. The students also should be able to simulate and predict the engineering problems in vehicle industry, and understand its limitations.

Graduation Requirement 6—Engineering and Society: Ability to conduct a feasibility analysis based on engineering-related background knowledge, and evaluate effects of engineering practice and solutions on society, health, safety, legislation and culture, as well as understanding related responsibilities.

Graduation Requirement 7—Environment and Sustainability: Ability to understand and evaluate the impacts of engineering practices in vehicle engineering on the environment, society and sustainability.

Graduation Requirement 8—Professional Norms: With humanities and social science literacy and social responsibility, can understand and comply with engineering professional **ethics** and norms in the engineering practice of vehicle engineering.

Graduation Requirement 9—Individual and Team: Ability to participate in the multidisciplinary team and serve as the leader in the team.

Graduation Requirement 10—Communication: Ability to conduct effective communication with industrial engineers and the **publics** on complex engineering issues in the field of vehicle industry, such as writing reports, making presentations and answer question. The student should also be equipped with the international perspective and the ability to communicate in a cross-cultural background.

Graduation Requirement 11—Project Management: Understand the engineering management principles and economic decision-making methods in the vehicle engineering, and be able to apply them in the multidisciplinary condition.

Graduation Requirement 12—Lifelong learning: With the **consciousness** of the self-directed and lifelong learning, and be able to continuously learn and adapt to development.

4. 学制与学位

学制: 4年 Duration: 4 Year

学位: 工学学士 Degree: Bachelor of Engineering

5. 主干学科与主干课程

主干学科: 机械工程、交通运输工程、力学

Main Subject: Mechanical Engineering, Traffic and Transportation Engineering, Mechanics

主干课程: 理论力学、材料力学、流体力学、热工基础、机械工程制图、机械原理、机械设计、制造技术、测试技术基础、控

制工程基础、流体传动与控制、机械精度设计与检测基础、单片机原理与应用、有限元法及应用、机械振动、电机与控制、机器学习、工程经济与项目管理。

Main Course: Theoretical Mechanics, Material Mechanics, Fluid Mechanics, Thermal Engineering, Mechanical Engineering Drawing, Mechanical principle, Mechanical Design, Manufacturing Technology, Foundation of Testing Technology, Foundation of Control Engineering, Fluid Transmission and Control, Mechanical Precision Design and Testing Foundation, Fundamental of Single Chip Microcomputer and its Application, Finite Element and its Application, Mechanical Vibration, Motor and Control, Machine Learning, Engineering Economics and Project Management.

6. 毕业学分基本要求

| 课程体系 Curriculum System | | 学分要求 Credits Requirements | | | | | | 小计 Subtotal |
|--|---------------------------------------|------------------------------|----------------|--------------------------------|----------------|----------------------|----------------|----------------|
| | | 必修 Compulsory | | 限修 Distributional Electives | | 选修 Free Electives | | |
| | | 理论 Theory | 实践 Practice | 理论 Theory | 实践 Practice | 理论 Theory | 实践 Practice | |
| 公共基础 课程 Public Basic Courses | 思想政治类 Ideological Politics Courses | 14 | 2 | | | | | 16 |
| | 军事类 Military Courses | 2 | 2 | | | | | 4 |
| | 外语类 Foreign Language Courses | 6 | | 2 | | | | 8 |
| | 体育类 Physical | | 4 | | | | | 4 |

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|---|---|------|-----|---|--|--|--|----|
| | Education Courses | | | | | | | |
| 通识教育课程 General Education Courses | 核心通识课 Core General Education Courses | | | 4 | | | | 4 |
| | 新生研讨课 Freshman Seminar | | | 2 | | | | 2 |
| 学科与专业基础课程(含实验) Discipline and Specialty Foundational Courses (Including Experiments) | 数学与自然科学基础课 Foundational Courses on Mathematics and Natural Science | 23.5 | 2.5 | | | | | 26 |
| | 专业基础课 Professional Foundational Courses | 45 | 13 | | | | | 58 |
| 专业课程(含实验) Specialized Core Course | 专业核心课程 Specialized Core Course | 8 | 2 | | | | | 10 |

| | | | | | | | | |
|---|--|--|----|---|--|--|--|----|
| Specialized Courses (Including Experiments) | 专业限修课程 Specialized Restricted Courses | | | 8 | | | | 8 |
| 实习实践教学 Practice Courses | 基本技能训练、实习实训、综合课程设计、社会与文化素质实践、毕业实习与毕业设计 Basic Skills Training, Practical Training, Integrated Curriculum Design, Social and Cultural Quality Practice, Graduation Internship and Graduation Design | | 14 | | | | | 14 |
| | 跨学科课程、美育专业类课程、学科 | | | | | | | |

| | | | | | | | | |
|--|---|--|--|---|--|--|---|--|
| <p>多元化课程 Diversified Courses</p> | <p>Interdisciplinary Courses, Aesthetic Education Courses, Subject Competition Courses, other Personalized Elective Courses , etc</p> | | | 4 | | | 4 | |
| <p>创新创业实践 Innovation and Entrepreneurship Practice</p> | <p>Innovation and Entrepreneurship Training Program, Personalized Experiments, Subject Competition, Innovation Lectures, etc</p> | | | 2 | | | 2 | |
| | <p>大学生综</p> | | | | | | | |

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|---------------------------------|--|--|--|--|--|--|--|-----|
| 必修环节 A Compulsory Part | 合素质提升、学生体质达标测评 Comprehensive Quality Improvement Courses for College Students, Assessment of Students' Physical Fitness | | | | | | | 0 |
| 总 计 Total | | | | | | | | 160 |

附录课程设置细化表

培养方案是大学期间学习的重要指导文件，如系统培养方案与学院下发的培养方案有差异，请以学院下发正式书面版为准。

| 课程大类 | 课程类型 | 课程名称 | 性质 | 学分 | 实践学分 | 开课 | 学年 | 学期 |
|----------|--------|---------------------|----|-----|------|-----|----|----|
| 创新创业实践模块 | 创新创业实践 | SWJTU00113课外创新实践 | 必 | 2.0 | 2.0 | 机械 | 4 | 2 |
| | 军事类 | PAFD000111军事理论 | 必 | 2.0 | 0.0 | 武装部 | 1 | 1 |
| | | PAFD000211军事技能 | 必 | 2.0 | 2.0 | 武装部 | 1 | 3 |
| | | MARX000111中国近现代史纲要 | 必 | 3.0 | 0.4 | 马院 | 1 | 1 |
| | | MARX000311形势与政策 I | 必 | 0.0 | 0.0 | 马院 | 1 | 1 |
| | | MARX000911思想道德与法治 | 必 | 3.0 | 0.4 | 马院 | 1 | 2 |
| | | MARX021911形势与政策 II | 必 | 0.0 | 0.0 | 马院 | 1 | 2 |
| | | MARX022011形势与政策 III | 必 | 0.0 | 0.0 | 马院 | 2 | 1 |

| | | | | | | | | |
|--------------|-------------------|--------------------------------|---|-----|-----|----|---|---|
| 公共基础课程 模块 | 思想政治类 | MARX022111形势与政策IV | 必 | 0.0 | 0.0 | 马院 | 2 | 2 |
| | | MARX021611马克思主义基本原理 | 必 | 3.0 | 0.4 | 马院 | 2 | 2 |
| | | MARX001011毛泽东思想和中国特色社会主义理论体系概论 | 必 | 3.0 | 0.4 | 马院 | 3 | 1 |
| | | MARX022211形势与政策V | 必 | 0.0 | 0.0 | 马院 | 3 | 1 |
| | | MARX022311形势与政策V I | 必 | 0.0 | 0.0 | 马院 | 3 | 2 |
| | | MARX001111习近平新时代中国特色社会主义思想概论 | 必 | 3.0 | 0.4 | 马院 | 3 | 2 |
| | | MARX022411形势与政策V II | 必 | 0.0 | 0.0 | 马院 | 4 | 1 |
| | | MARX022511形势与政策VIII | 必 | 2.0 | 0.0 | 马院 | 4 | 2 |
| | 体育类 | PHYE000111体育 I | 必 | 1.0 | 1.0 | 体育 | 1 | 1 |
| | | PHYE000211体育 II | 必 | 1.0 | 1.0 | 体育 | 1 | 2 |
| | | PHYE000311体育III | 必 | 0.5 | 0.5 | 体育 | 2 | 1 |
| | | PHYE000411体育IV | 必 | 0.5 | 0.5 | 体育 | 2 | 2 |
| | | PHYE000511体育健康课程 I | 必 | 0.5 | 0.5 | 体育 | 3 | 1 |
| | | PHYE000611体育健康课程 II | 必 | 0.5 | 0.5 | 体育 | 3 | 2 |
| | 外语类 | SoFL001511英语 I | 必 | 2.0 | 0.0 | 外语 | 1 | 1 |
| | | SoFL000512英语 II | 必 | 2.0 | 0.0 | 外语 | 1 | 2 |
| | | SoFL004411通用学术英语 | 必 | 2.0 | 0.0 | 外语 | 2 | 1 |
| | | SoFL003911职场英语 | 限 | 2.0 | 0.0 | 外语 | 2 | 2 |
| | | SoFL004011交际与文化视听说 | 限 | 2.0 | 0.0 | 外语 | 2 | 2 |
| | | SoFL004111语言、文化与翻译 | 限 | 2.0 | 0.0 | 外语 | 2 | 2 |
| | | SoFL004211英语公共演讲 | 限 | 2.0 | 0.0 | 外语 | 2 | 2 |
| 实习实践教学 模块 | 毕业实 习与毕 业设计 | ENTC000313工程训练A | 必 | 2.0 | 2.0 | 工业 | 1 | 2 |
| | | MECE007913机械原理课程设计 | 必 | 1.0 | 1.0 | 机械 | 2 | 3 |
| | | MECE008013机械设计课程设计 | 必 | 1.0 | 1.0 | 机械 | 3 | 2 |
| | | MECE008213专业认识实习 | 必 | 1.0 | 1.0 | 机械 | 3 | 3 |
| | | MECE017413车辆综合实训 | 必 | 1.0 | 1.0 | 机械 | 4 | 1 |
| | | MECE008313毕业设计(论文) | 必 | 8.0 | 8.0 | 机械 | 4 | 2 |
| 通识教育课程 模块 | 新生研 讨类 | MECE000414汽车从经典到现代 | 必 | 2.0 | 0.0 | 机械 | 1 | 1 |
| | | MECE001914高速铁路漫谈 | 必 | 2.0 | 0.0 | 机械 | 1 | 1 |
| | | MECE000114现代轨道车辆概论 | 必 | 2.0 | 0.0 | 机械 | 1 | 1 |
| | | MECE000514列车网络概论 | 必 | 2.0 | 0.0 | 机械 | 1 | 1 |
| | | MECE002114城市轨道交通导论 | 必 | 2.0 | 0.0 | 机械 | 1 | 1 |
| | | MECE000214汽车与新能源技术 | 必 | 2.0 | 0.0 | 机械 | 1 | 1 |

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|-------------|------------|-----------------------|-------------------|-----|-----|-----|----|---|---|
| 学科与专业基础课程模块 | 数学与自然科学基础类 | MATH000812高等数学 I | 必 | 5.0 | 0.0 | 数学 | 1 | 1 | |
| | | SLSE001012工程化学C | 必 | 2.0 | 0.5 | 生命 | 1 | 1 | |
| | | PHYS001112大学物理B I | 必 | 3.0 | 0.0 | 物理 | 1 | 2 | |
| | | PHYS000712大学物理实验 I | 必 | 1.0 | 1.0 | 物理 | 1 | 2 | |
| | | MATH011512高等数学 II | 必 | 5.0 | 0.0 | 数学 | 1 | 2 | |
| | | MATH000112线性代数B | 必 | 3.0 | 0.0 | 数学 | 2 | 1 | |
| | | PHYS000812大学物理实验 II | 必 | 1.0 | 1.0 | 物理 | 2 | 1 | |
| | | PHYS001212大学物理B II | 必 | 3.0 | 0.0 | 物理 | 2 | 1 | |
| | | MATH001612概率论与数理统计 | 必 | 3.0 | 0.0 | 数学 | 2 | 2 | |
| | 专业基础类 | SCAI000512计算机程序设计基础 | 必 | 3.0 | 1.0 | 计算机 | 1 | 1 | |
| | | MECE001112机械工程制图 I | 必 | 2.0 | 0.0 | 机械 | 1 | 1 | |
| | | MECE001212机械工程概论 | 必 | 1.0 | 0.5 | 机械 | 1 | 1 | |
| | | MECE001412轨道交通概论 | 必 | 1.0 | 0.5 | 机械 | 1 | 1 | |
| | | MECE004412机械工程制图 II | 必 | 3.0 | 1.0 | 机械 | 1 | 2 | |
| | | MECE004512三维设计与制图 | 必 | 2.0 | 1.0 | 机械 | 2 | 1 | |
| | | MASE016412工程材料 | 必 | 2.0 | 0.0 | 材料 | 2 | 1 | |
| | | ELEC015912电工技术B | 必 | 3.0 | 0.5 | 电气 | 2 | 1 | |
| | | MECH000412理论力学B | 必 | 4.0 | 1.0 | 力航 | 2 | 1 | |
| | | MECH000712材料力学B | 必 | 4.0 | 1.0 | 力航 | 2 | 2 | |
| | | MECE005012测试技术基础(双语) | 必 | 3.0 | 1.0 | 机械 | 2 | 2 | |
| | | ELEC016012电子技术B | 必 | 3.0 | 0.5 | 电气 | 2 | 2 | |
| | | MECE004812机械原理A | 必 | 4.0 | 0.0 | 机械 | 2 | 2 | |
| | | MECE004912机械设计A | 必 | 4.0 | 0.5 | 机械 | 3 | 1 | |
| | | MECE005412制造技术A | 必 | 4.0 | 0.5 | 机械 | 3 | 1 | |
| | | MECE005112控制工程基础 | 必 | 3.0 | 1.0 | 机械 | 3 | 1 | |
| | | MECE005212单片机原理与应用 | 必 | 2.0 | 1.0 | 机械 | 3 | 1 | |
| | | MECE004612流体力学B | 必 | 2.0 | 0.0 | 机械 | 3 | 1 | |
| | | MECE004712热工基础 | 必 | 3.0 | 0.0 | 机械 | 3 | 1 | |
| | | MECE005312机械精度设计与检测基础 | 必 | 2.0 | 0.5 | 机械 | 3 | 2 | |
| | | MECE005512流体传动与控制(双语) | 必 | 3.0 | 0.5 | 机械 | 3 | 2 | |
| | | 专业核心类 | MECE005912有限元法及应用 | 必 | 2.0 | 1.0 | 机械 | 3 | 1 |
| | | | MECE006012机械振动 | 必 | 2.0 | 0.0 | 机械 | 3 | 2 |
| | | | MECE005712机器学习 | 必 | 2.0 | 0.0 | 机械 | 3 | 2 |

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|--------|-----------|---------------------------|---|-----|-----|----|---|---|
| 专业课程模块 | | MECE005612电机与控制 | 必 | 2.0 | 1.0 | 机械 | 3 | 2 |
| | | MECE005812工程经济与项目管理 | 必 | 2.0 | 0.0 | 机械 | 4 | 1 |
| | 专业限 修类 | MECE016212机车构造与原理 | 限 | 3.0 | 0.0 | 机械 | 3 | 2 |
| | | MECE016412机车牵引传动与制动 | 限 | 3.0 | 0.0 | 机械 | 3 | 2 |
| | | MECE016512铁道车辆构造与原理 | 限 | 3.0 | 0.0 | 机械 | 3 | 2 |
| | | MECE017012城市轨道交通车辆牵引传动与制动 | 限 | 3.0 | 0.0 | 机械 | 3 | 2 |
| | | MECE017112汽车构造 | 限 | 3.0 | 0.0 | 机械 | 3 | 2 |
| | | MECE017212汽车理论 | 限 | 3.0 | 0.0 | 机械 | 3 | 2 |
| | | MECE016712铁道车辆装备及制动 | 限 | 3.0 | 0.0 | 机械 | 3 | 2 |
| | | MECE016812城市轨道交通车辆构造与原理 | 限 | 4.0 | 0.0 | 机械 | 3 | 2 |
| | | MECE016912城市轨道交通车辆强度及动力学 | 限 | 2.0 | 0.0 | 机械 | 4 | 1 |
| | | MECE017312汽车设计 | 限 | 2.0 | 0.0 | 机械 | 4 | 1 |
| | | MECE016612铁道车辆强度及动力学 | 限 | 2.0 | 0.0 | 机械 | 4 | 1 |
| | | MECE016312机车强度及动力学 | 限 | 2.0 | 0.0 | 机械 | 4 | 1 |