2017级土木工程专业培养方案

专业代码：081001

一、基本信息

1.学科门类：工学

2.专业代码：081001

3.标准学制：4年，按照学分制管理

4.授予学位：工学学士

5.最低毕业学分：184学分，其中理论课程141学分，实践环节43学分。

二、专业定位

坚持“厚基础、宽口径、重能力、有特色、求创新”人才培养定位，培养在土木工程领域的高素质应用型人才。专业在省内处于领先地位，并在优势方向接近国内一流水平。

三、培养目标

培养适应社会经济发展和现代化建设需求，具有良好的人文素养、扎实的理论基础、系统的专业知识、较强的实践能力、一定的创新能力和国际视野，具有较好的团队合作精神和终身学习能力，具备分析和解决土木工程领域复杂工程问题能力的土木工程高素质应用型人才。学生毕业后经过5年左右的实际工作锻炼，能够在土木工程及其相关领域成长为工作单位的技术骨干，并达到以下目标：

培养目标1：能应用所学专业理论和知识在土木工程和相关领域从事技术和管理工作；

培养目标2：能应用所学理论知识、工程实践技术和管理经验分析、处理和解决工作中出现的复杂工程问题；

培养目标3：具备团队精神和沟通能力，能较好地胜任管理团队、制定工作计划并顺利实施的能力；

培养目标4：具有一定的创新意识和能力，并能够随着行业和职业发展终身持续学习；

培养目标5：具有良好的职业素养和社会责任感，能够在土木工程领域的设计、施工、科研和管理过程中自觉重视社会、健康、安全、法律、文化以及环境等因素。

四、毕业要求

表1 毕业要求基本内容

| 毕业要求 | 毕业要求指标点 |
| --- | --- |
| 1 工程知识：能够将数学、自然科学、工程基础和专业知识用于解决土木工程专业的复杂工程问题。 | 1.1 能够将数学、自然科学、工程基础和专业知识的基本概念运用到复杂工程问题的适当表述之中。 |
| 1.2 能够运用土木工程科学知识进行复杂工程问题建立数学或力学模型，并达到适当的精度要求。 |
| 1.3 能够运用土木工程知识判断复杂工程问题的数学或力学模型的正确性，并能正确分析、求解模型。 |
| 1.4 掌握分析土木工程复杂问题的原理、工具和方法，具备解构复杂工程问题并进行系统分析的能力。 |
| 1.5 系统性地掌握土木工程科学知识体系，能够对复杂工程问题的解决方案进行综合分析和优化比较。 |
| 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土木工程专业的复杂工程问题，以获得有效结论。 | 2.1 能够利用土木工程知识的基本原理对土木工程专业的复杂工程问题进行识别。 |
| 2.2 能够运用文献、规范、标准或图集等对土木工程专业的复杂工程问题进行推导演绎和计算分析并获得解决问题的方案和方法。 |
| 2.3 能够运用文字、符号、图表、和图纸等形式对土木工程专业的复杂工程问题进行有效表达。 |
| 3 设计/开发解决方案：能够设计（开发）满足土木工程特定需求的体系、结构、构件（节点）或者施工方案，并在设计环节中考虑社会、健康、安全、法律、文化以及环境等因素。 | 3.1 能够运用结构设计基本原理，设计（开发）土木工程结构构件。 |
| 3.2 能够在确定设计方案时进行方案经济性对比确定优选方案，在提出解决方案时具有创新意识。 |
| 3.3 能够根据土木工程设计理论对工程建立计算分析模型，进行计算分析，并正确判断结果的合理性。 |
| 3.4 能运用专业术语表述计算过程、用图纸表达设计成果。 |
| 3.5 能够制定一般工程项目的施工方案，编制施工组织设计和编制工程概预算。 |
| 3.6 能够在设计或施工环节中考虑社会、健康、安全、法律、文化以及环境等因素。 |
| 4研究：能够基于科学原理并采用科学方法对土木工程的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。 | 4.1能够基于科学原理对拟研究的土木工程问题提出实验（测试）方案，设计实验项目。 |
| 4.2能够根据实验（测试）方案，正确选用和操作实验装置或测试设备，安全开展实验。 |
| 4.3能够正确收集、处理、分析与解释实验（测试）数据，通过信息综合获得合理有效的结论并应用于工程实践。 |
| 5 使用现代工具：能够针对土木工程复杂工程问题,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,包括对复杂工程问题的预测与模拟,并能够理解其局限性。 | 5.1能够合理选择与使用勘测、制图、测试与检测、有限元分析等技术以及计算机、程序设计语言、纸质与电子文献等工具和资源，正确预测与模拟复杂工程问题。 |
| 5.2能够通过所学知识开发现代工具和信息技术工具，并利用其对复杂工程问题进行预测与模拟。 |
| 5.3能够通过使用现代工具，正确判断和解释计算分析结果，并能够理解其局限性。 |
| 6 工程与社会：能够基于土木工程相关背景知识和进行合理分析，评价土木工程实践和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,并理解土木工程师应承担的责任。 | 6.1能够理解土木工程实践中施工工艺、施工方法、施工器械，特别是新材料、新工艺、新方法的使用对社会、健康、安全、法律以及文化的影响。 |
| 6.2能够基于土木工程相关的背景知识和标准，针对特定工程解决方案具体给出分析及评价社会、健康、安全、法律、文化以及环境等因素对工程的影响，制定并采取适当措施，理解土木工程师应承担的责任。 |
| 7 环境和可持续发展：能够理解和评价针对土木工程复杂问题的实践对环境、社会可持续发展的影响。 | 7.1能够理解土木工程实践对环境和社会可持续发展的影响。 |
| 7.2能够评价土木工程实践对环境和社会可持续发展的影响，并制定相应的解决方案。 |
| 8 职业规范：具有人文社会科学素养、社会责任感，能够在土木工程实践中理解并遵守工程职业道德和行为规范，履行职责。 | 8.1具有必要的人文社会科学知识与素养，健康的体魄、健康的心理与正确的价值观以及社会责任感。 |
| 8.2理解并遵守土木工程实践相关的法律、法规、专业规范、技术规程和工程师职业道德准则，增强学生为企业发展和社会进步服务的使命感和责任感。 |
|
| 9 团队协作与沟通：在解决土木工程专业的复杂问题时，能够与业界同行及社会公众进行有效的沟通与交流，并且能够在多学科背景下的团队中承担个体、团队成员或负责人的角色。 | 9.1具有良好的团队合作意识和协作精神，能够积极参与团队讨论、与团队成员协作共同达成工作目标。 |
| 9.2能够独立承担土木工程的专项任务；能够在多学科的团队中承担指定的任务，并且能够在任务实施过程中与其他团队成员协调技术、经济和环境等问题。 |
| 9.3能够就复杂的土木工程设计、施工问题绘制标准的工程图、撰写设计说明书、文献综述报告和研究报告等，并能够与同行就工程专业问题进行有效的沟通和交流。 |
| 9.4能够掌握一门外语并能进行书面和口头表达和交流，对其文化有一定的了解。 |
| 10 项目管理：理解并掌握工程管理原理与经济决策方法，并能在多学科环境中应用。 | 10.1具有工程项目管理、工程经济等基础知识； |
| 10.2能够在与土木工程专业相关的多学科环境中应用工程管理和工程经济知识，对工程全生命周期等阶段内容进行管理决策和经济性决策。 |
|
| 11 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。 | 11.1具有自主学习和终身学习的意识，以及提高自主学习和适应土木工程新发展的能力。 |
| 11.2能够追踪土木工程专业发展动态，不断学习及适应土木工程新技术的发展。 |

五、毕业要求对培养目标的支撑

土木工程专业毕业要求对培养目标的支撑关系见表2。

表2.土木工程专业毕业要求对培养目标的支撑关系

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 培养目标1 | 培养目标2 | 培养目标3 | 培养目标4 | 培养目标5 |
| 毕业要求1 | √ | √ |  |  |  |
| 毕业要求2 | √ | √ |  |  |  |
| 毕业要求3 | √ | √ |  | √ | √ |
| 毕业要求4 | √ | √ |  |  |  |
| 毕业要求5 | √ | √ |  |  |  |
| 毕业要求6 | √ | √ | √ |  | √ |
| 毕业要求7 | √ | √ | √ | √ | √ |
| 毕业要求8 |  |  | √ | √ | √ |
| 毕业要求9 |  | √ | √ | √ |  |
| 毕业要求10 |  |  | √ |  | √ |
| 毕业要求11 |  | √ |  | √ | √ |

六、专业方向介绍

1、建筑工程方向：

随着近年来国家基本建设的快速发展，建筑工程领域发展迅猛，对相关人才的需求量大。在实行“大土木”的专业教育中，通过建立相关培养方案和课程设置，对教学内容进行必要调整，确保建筑工程方向特色人才的培养。建筑工程专业方向主要服务于房屋建筑及相关工程的设计、施工与管理，为此设置了“房屋建筑学”、“房屋混凝土及砌体结构设计”、“基础工程”、“钢结构设计原理”、“施工技术”、“建筑结构抗震设计”等专业平台必修课；其它专业选修课则分别为各不同毕业去向的学生开设相关课群组的任选课，将有关内容融入到相关的课程或实践环节中。

2、桥梁工程方向：

随着城市建设和公路建设的不断升温，近年来我国土木工程领域对桥梁工程专业人才的需求量较大。在实行“大土木”的专业教育中，通过建立相关培养方案和课程设置，对教学内容进行必要调整，确保桥梁工程方向特色人才的培养。桥梁专业方向在桥梁工程方面要服务于现场，适用于基层，为此设置了“桥梁工程”、“钢结构与钢桥”、“桥涵水文”、“施工技术”、“基础工程”等专业平台必修课；其它专业选修课则分别为各不同毕业去向的学生开设相关课群组的任选课，将有关内容融入到相关的课程或实践环节中。

3、城市轨道工程方向：

近年来我国在城市轨道工程领域发展迅猛，交通土建工程领域对相关人才的需求量大。在实行“大土木”的专业教育中，通过建立相关培养方案和课程设置，对教学内容进行必要调整，确保城市轨道交通特色人才的培养。城市轨道专业方向在城市轨道工程方面要服务于现场，适用于基层，为此设置了“城市轨道桥梁”、“地下铁道结构设计”、“城市轨道工程”、“轨道交通线路设计”、“施工技术”、“施工组织与概预算”等专业平台必修课；其它专业选修课则分别为各不同毕业去向的学生开设相关课群组的任选课，将有关内容融入到相关的课程或实践环节中。

七、核心课程

1、建筑工程方向：

土木工程制图、材料力学、结构力学、测量学、土木工程材料、流体力学、土力学、基础工程、混凝土结构设计原理、房屋建筑学、房屋混凝土及砌体结构设计、钢结构设计原理、房屋建筑钢结构设计、高层建筑结构设计、建筑结构抗震设计、施工技术、工程项目管理、施工组织与概预算。

2、桥梁工程方向：

土木工程制图、材料力学、结构力学、测量学、土木工程材料、流体力学、土力学、基础工程、混凝土结构设计原理、桥梁工程、钢结构与钢桥、桥涵水文、施工技术、工程项目管理、施工组织与概预算、隧道工程、路基路面工程、桥梁抗震及抗风。

3、城市轨道工程方向：

土木工程制图、材料力学、结构力学、测量学、土木工程材料、流体力学、土力学、基础工程、混凝土结构设计原理、城市轨道交通规划、轨道交通线路设计、城市轨道工程、城市轨道桥梁、地下铁道结构设计、施工技术、工程项目管理、施工组织与概预算、工务工程。

八、主要实践环节

1、建筑工程方向：

计算机绘图实习、工程地质实习、测量实习、房屋建筑学课程设计、基础工程课程设计、房屋混凝土及砌体结构课程设计、房屋建筑钢结构设计课程设计、施工组织与概预算课程设计、土木工程电算实训、认识实习、施工实习、毕业设计。

2、桥梁工程方向：

计算机绘图实习、工程地质实习、测量实习、施工测量实习、路基路面工程课程设计、桥梁工程课程设计、钢结构与钢桥课程设计、施工组织及概预算课程设计、基础工程课程设计、计算机辅助设计课程设计、认识实习、施工实习、毕业设计。

3、城市轨道工程方向：

计算机绘图实习、工程地质实习、测量实习、施工测量实习、基础工程课程设计、城市轨道桥梁课程设计、城市轨道工程课程设计、轨道交通线路设计课程设计、地下铁道结构设计课程设计、施工组织与概预算课程设计、认识实习、施工实习、毕业设计。

九、毕业学分要求

本专业学生须按培养方案要求修读各类课程，最低总分达到184学分，其中理论课程141学分，实践环节43学分，方可毕业。

土木工程专业2017级学分要求

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 毕业总学分184 | | | | 分项学分 | | 学分占比 |
| 其  中 | 公共基础课 | 必修课 | | 38.5 | 41.5 | 22.55% |
| 选修课 | | 3 |
| 学科基础课 | 必修课 | | 56.5 | 65.5 | 35.60% |
| 选修课 | | 9 |
| 专业课 | 必修课 | | 16 | 16 | 8.70% |
| 选修课 | 限选 | 18 | 18 | 9.78% |
| 任选 | 0 |
|  | 实践教学 | 含素质拓展 | | 43 | 43 | 23.37% |

十、土木工程专业教学流程图







十一、土木工程专业教学计划表

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **１、公共基础课程平台** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **课程模块** | | | **课程编号** | | | | | **课程名称(中英文）** | | | | | | | | **考核类型** | | | | | **学分** | | | | | | | **总学时** | | | | | | | **课内学时** | | | | **实践学时** | | | | | | | | | | | **修读学期** | | | | **分学期周学时分配表** | | | | | | | | | | | | | | | | | | | | | | | | | | | | **备注** | | |
| **实验** | | | | **上机** | | | **其它** | | | | **1** | | | | **2** | | | | **3** | | | | **4** | | | | **5** | | | | **6** | | | **7** | | | | **8** |
| 公共必修模块 | | | 1514100020 | | | | | 马克思主义基本原理 Marxism Basic Principle | | | | | | | | 考查 | | | | | 3 | | | | | | | 48 | | | | | | | 32 | | | |  | | | |  | | | 16 | | | | 1 | | | | 3 | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1500100010 | | | | | 职业生涯与发展规划 Career Development and Planning | | | | | | | | 考查 | | | | | 1 | | | | | | | 20 | | | | | | | 16 | | | |  | | | |  | | | 4 | | | | 1 | | | | 2 | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1501100010 | | | | | 交通概论（B） Traffic Generality(B) | | | | | | | | 考查 | | | | | 2 | | | | | | | 32 | | | | | | | 32 | | | |  | | | |  | | |  | | | | 1 | | | | 2 | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | 土木工程 | | |
| 1506100010 | | | | | 计算机基础 Fundamentals of Computer | | | | | | | | 考查 | | | | | 1 | | | | | | | 32 | | | | | | | 20 | | | |  | | | | 12 | | |  | | | | 1 | | | | 2 | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1514100040 | | | | | 思想道德修养与法律基础 Cultivation of Ethic Thought and Fundamentals of Law | | | | | | | | 考查 | | | | | 3 | | | | | | | 48 | | | | | | | 32 | | | |  | | | |  | | | 16 | | | | 2 | | | |  | | | | 2 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1505100020 | | | | | 军事理论  Military Theory | | | | | | | | 考查 | | | | | 1 | | | | | | | 36 | | | | | | | 24 | | | |  | | | |  | | | 12 | | | | 2 | | | |  | | | | 2 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1514100010 | | | | | 毛泽东思想和中国特色社会主义理论体系概论I  An Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics（I） | | | | | | | | 考试 | | | | | 3.5 | | | | | | | 56 | | | | | | | 56 | | | | 0 | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 4 | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1514190020 | | | | | 毛泽东思想和中国特色社会主义理论体系概论II  An Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics（II） | | | | | | | | 考查 | | | | | 2.5 | | | | | | | 40 | | | | | | | 0 | | | |  | | | |  | | | 40 | | | | 3 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1500100020 | | | | | 创业教育 Entrepreneurship Education | | | | | | | | 考查 | | | | | 0.5 | | | | | | | 16 | | | | | | | 8 | | | |  | | | |  | | | 8 | | | | 3 | | | |  | | | |  | | | | 2 | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1514100030 | | | | | 中国近现代史纲要 Chinese near contemporary history summary | | | | | | | | 考查 | | | | | 2 | | | | | | | 32 | | | | | | | 24 | | | |  | | | |  | | | 8 | | | | 4 | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | |  | | | |  |  | | |
| 1500100030 | | | | | 就业指导  Employment Guidance | | | | | | | | 考查 | | | | | 1 | | | | | | | 16 | | | | | | | 16 | | | |  | | | |  | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 2 | | | |  | | |  | | | |  |  | | |
| 1514190011 | | | | | 形势政策与省情教育I  Situation and Policy and the Provincial Education（I） | | | | | | | | 考查 | | | | | 1 | | | | | | | 16 | | | | | | | 12 | | | |  | | | |  | | | 4 | | | | 1,2 | | | | 2 | | | | 2 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1514190012 | | | | | 形势政策与省情教育II  Situation and Policy and the Provincial Education（II） | | | | | | | | 考查 | | | | | 1 | | | | | | | 16 | | | | | | | 12 | | | |  | | | |  | | | 4 | | | | 3,4 | | | |  | | | |  | | | | 2 | | | | 2 | | | |  | | | |  | | |  | | | |  |  | | |
| 1505100011 | | | | | 体育I  physical education I | | | | | | | | 考查 | | | | | 1 | | | | | | | 32 | | | | | | | 32 | | | |  | | | |  | | |  | | | | 1 | | | | 2 | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1505100012 | | | | | 体育II  physical education II | | | | | | | | 考查 | | | | | 1 | | | | | | | 32 | | | | | | | 32 | | | |  | | | |  | | |  | | | | 2 | | | |  | | | | 2 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1505100013 | | | | | 体育III  physical education III | | | | | | | | 考查 | | | | | 1 | | | | | | | 32 | | | | | | | 32 | | | |  | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 2 | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1505100014 | | | | | 体育IV  physical education IV | | | | | | | | 考查 | | | | | 1 | | | | | | | 32 | | | | | | | 32 | | | |  | | | |  | | |  | | | | 4 | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | |  | | | |  |  | | |
| 1509100011 | | | | | 大学英语I College EnglishⅠ | | | | | | | | 考试 | | | | | 3 | | | | | | | 48 | | | | | | | 48 | | | |  | | | |  | | |  | | | | 1 | | | | 3 | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1509100012 | | | | | 大学英语II College EnglishII | | | | | | | | 考试 | | | | | 3 | | | | | | | 48 | | | | | | | 48 | | | |  | | | |  | | |  | | | | 2 | | | |  | | | | 3 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1509100013 | | | | | 大学英语III College English III | | | | | | | | 考试 | | | | | 3 | | | | | | | 48 | | | | | | | 48 | | | |  | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 3 | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| 1509100014 | | | | | 大学英语Ⅳ College EnglishⅣ | | | | | | | | 考试 | | | | | 3 | | | | | | | 48 | | | | | | | 48 | | | |  | | | |  | | |  | | | | 4 | | | |  | | | |  | | | |  | | | | 3 | | | |  | | | |  | | |  | | | |  |  | | |
| **小 计** | | | | | | | | | | | | | | | | | | **38.5** | | | | | | | **728** | | | | | | | **604** | | | | **0** | | | | **12** | | | **112** | | | |  | | | | **16** | | | | **11** | | | | **13** | | | | **9** | | | | **2** | | | | **0** | | | **0** | | | | **0** |  | | |
| 公共选修模块 | | | 详细课程参见校公共选修课一览表，学生毕业时获得的公共选修课总学分不得少于8学分。学生从第二学期开始自主选修。 | | | | | | | | | | 考查 | | | | | | | | 8 | | | | | | |  | | | | | | |  | | | |  | | | |  | | |  | | | | 3-7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| **小 计** | | | | | | | | | | | | | | | | | | | | | **46.5** | | | | | | |  | | | | | | |  | | | |  | | | |  | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  |  | | |
| **２、专业基础课程平台** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **课程模块** | | | **课程编号** | | | | | | **课程名称(中英文）** | | | | | | | | | **考核类型** | | | | | **学分** | | | | | | **总学时** | | | | **课内学时** | | | | | | **实践学时** | | | | | | | | | | | **修读学期** | | | | **分学期周学时分配表** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **备注** |
| **实验** | | | | **上机** | | | **其它** | | | | **1** | | | | **2** | | | | **3** | | | | **4** | | | | **5** | | | | **6** | | | **7** | | | | **8** | | |
| 学科基础必修模块 | | | 1508100011 | | | | | | 高等数学(A)Ⅰ  Advanced Mathematics(A)Ⅰ | | | | | | | | | 考试 | | | | | 6 | | | | | | 96 | | | | 96 | | | | | | 0 | | | |  | | |  | | | | 1 | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1508100201 | | | | | | 土木工程制图I  Civil Engineering Drafting | | | | | | | | | 考试 | | | | | 3 | | | | | | 48 | | | | 48 | | | | | |  | | | |  | | |  | | | | 1 | | | | 3 | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1506100080 | | | | | | 程序设计基础(VB语言) Programming Fundamentals(VB Language) | | | | | | | | | 考试 | | | | | 2.5 | | | | | | 48 | | | | 32 | | | | | |  | | | | 16 | | |  | | | | 2 | | | |  | | | | 2 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1508100332 | | | | | | 土木工程制图II  Civil Engineering Drafting | | | | | | | | | 考查 | | | | | 2 | | | | | | 32 | | | | 16 | | | | | |  | | | | 16 | | |  | | | | 2 | | | |  | | | | 2 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1508100012 | | | | | | 高等数学(A)Ⅱ  Advanced Mathematics (A)Ⅱ | | | | | | | | | 考试 | | | | | 4 | | | | | | 64 | | | | 64 | | | | | | 0 | | | |  | | |  | | | | 2 | | | |  | | | | 4 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1508100311 | | | | | | 大学物理Ⅰ College PhysicsⅠ | | | | | | | | | 考试 | | | | | 3 | | | | | | 48 | | | | 48 | | | | | | 0 | | | |  | | |  | | | | 2 | | | |  | | | | 3 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1508100321 | | | | | | 大学物理实验Ⅰ  Experiment College PhysicsⅠ | | | | | | | | | 考查 | | | | | 1 | | | | | | 16 | | | | 0 | | | | | | 16 | | | |  | | |  | | | | 2 | | | |  | | | | 2 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1508100312 | | | | | | 大学物理Ⅱ  College Physics Ⅱ | | | | | | | | | 考试 | | | | | 3 | | | | | | 48 | | | | 48 | | | | | | 0 | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 3 | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1508100322 | | | | | | 大学物理实验Ⅱ  Experiment College Physics Ⅱ | | | | | | | | | 考查 | | | | | 1 | | | | | | 16 | | | | 0 | | | | | | 16 | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 2 | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1508100040 | | | | | | 线性代数（A）  Linear Algebra （A） | | | | | | | | | 考查 | | | | | 2 | | | | | | 32 | | | | 32 | | | | | | 0 | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 2 | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1501100020 | | | | | | 理论力学（A）  Theoretical Mechanics（A） | | | | | | | | | 考试 | | | | | 3.5 | | | | | | 56 | | | | 56 | | | | | | 0 | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 4 | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1501100030 | | | | | | 土木工程材料 Civil Engineering Materials | | | | | | | | | 考查 | | | | | 3 | | | | | | 48 | | | | 36 | | | | | | 12 | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 3 | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1508100090 | | | | | | 概率论与数理统计  Probability Theory | | | | | | | | | 考查 | | | | | 3 | | | | | | 48 | | | | 48 | | | | | | 0 | | | |  | | |  | | | | 4 | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | |  | | | |  | | |  |
| 1501100040 | | | | | | 材料力学（A）  Mechanics of Materials(A) | | | | | | | | | 考试 | | | | | 4 | | | | | | 64 | | | | 56 | | | | | | 8 | | | |  | | |  | | | | 4 | | | |  | | | |  | | | |  | | | | 4 | | | |  | | | |  | | |  | | | |  | | |  |
| 1501100050 | | | | | | 工程地质学 Engineering geology | | | | | | | | | 考查 | | | | | 1.5 | | | | | | 24 | | | | 24 | | | | | | 0 | | | |  | | |  | | | | 4 | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | |  | | | |  | | |  |
| 1501100060 | | | | | | 测量学（A）  Survey | | | | | | | | | 考查 | | | | | 3 | | | | | | 48 | | | | 36 | | | | | | 12 | | | |  | | |  | | | | 4 | | | |  | | | |  | | | |  | | | | 3 | | | |  | | | |  | | |  | | | |  | | |  |
| 1501100070 | | | | | | 结构力学（A）  Structural Mechanics | | | | | | | | | 考试 | | | | | 4.5 | | | | | | 72 | | | | 72 | | | | | | 0 | | | |  | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 5 | | | |  | | |  | | | |  | | |  |
| 1501100080 | | | | | | 混凝土结构设计原理（A） Principles of Structure Designing（A） | | | | | | | | | 考试 | | | | | 4 | | | | | | 64 | | | | 60 | | | | | | 4 | | | |  | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 4 | | | |  | | |  | | | |  | | |  |
| 1501100090 | | | | | | 土力学（A）  Soil Mechanics（A） | | | | | | | | | 考试 | | | | | 2.5 | | | | | | 40 | | | | 32 | | | | | | 8 | | | |  | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |  | | |  |
| 小 计 | | | | | | | | | | | | | | | | | | | | 56.5 | | | | | | 912 | | | | 804 | | | | | | 76 | | | | 32 | | | 0 | | | |  | | | | 9 | | | | 13 | | | | 14 | | | | 11 | | | | 12 | | | | 0 | | | 0 | | | | 0 | | |  |
| 学科基础选修模块 | | | 1508100400 | | | | | | 工程化学 Engineering Chemistry | | | | | | | | | 考查 | | | | | 2 | | | | | | 32 | | | | 26 | | | | | | 6 | | | |  | | |  | | | | 2 | | | |  | | | | 2 | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 限选 |
| 1504103000 | | | | | | 管理学基础 Management Foundation | | | | | | | | | 考查 | | | | | 1 | | | | | | 16 | | | | 16 | | | | | | 0 | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 2 | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1504103010 | | | | | | 经济学基础 Economics foundation | | | | | | | | | 考查 | | | | | 1 | | | | | | 16 | | | | 16 | | | | | | 0 | | | |  | | |  | | | | 3 | | | |  | | | |  | | | | 2 | | | |  | | | |  | | | |  | | |  | | | |  | | |  |
| 1501100100 | | | | | | 流体力学（A） Fluid Mechanics | | | | | | | | | 考查 | | | | | 2 | | | | | | 32 | | | | 28 | | | | | | 4 | | | |  | | |  | | | | 4 | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | |  | | | |  | | | 限选 |
| 1507101440 | | | | | | 心理学基础 Psychology foundation | | | | | | | | | 考查 | | | | | 1 | | | | | | 16 | | | | 16 | | | | | | 0 | | | |  | | |  | | | | 4 | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | |  | | | |  | | |  |
| 1501100110 | | | | | | 环境科学基础 Foundation of Environmental Science | | | | | | | | | 考查 | | | | | 1 | | | | | | 16 | | | | 16 | | | | | | 0 | | | |  | | |  | | | | 4 | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | |  | | | |  | | | 限选 |
| 1508100120 | | | | | | 复变函数  Functions of Complex Variable | | | | | | | | | 考查 | | | | | 2 | | | | | | 32 | | | |  | | | | | |  | | | |  | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 限选 |
| 1501105270 | | | | | | 数值计算  Numerical Computation | | | | | | | | | 考查 | | | | | 2 | | | | | | 32 | | | |  | | | | | |  | | | |  | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 限选 |
| 1501100120 | | | | | | 结构稳定与振动（A）  Dynamics and Stabilities of Structures | | | | | | | | | 考查 | | | | | 2 | | | | | | 32 | | | | 32 | | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | |  | | | |  | | |  |
| 小 计 | | | | | | | | | | | | | | | | | | | | 10 | | | | | | 160 | | | | 150 | | | | | | 10 | | | |  | | |  | | | |  | | | | 0 | | | | 2 | | | | 4 | | | | 6 | | | | 0 | | | | 3 | | | 0 | | | |  | | |  |
| 学生至少应修学分数 | | | | | | | | | | | | | | | | | | | | 4 | | | | | | 64 | | | | 54 | | | | | | 10 | | | | 0 | | | 0 | | | |  | | | | 0 | | | | 2 | | | | 0 | | | | 2 | | | | 0 | | | | 0 | | | 0 | | | | 0 | | |  |
|  | | | **合 计** | | | | | | | | | | | | | | | | | | | | **60.5** | | | | | | **976** | | | | **858** | | | | | | **86** | | | | **32** | | | **0** | | | |  | | | | **9** | | | | **15** | | | | **14** | | | | **13** | | | | **12** | | | | **0** | | | **0** | | | | **0** | | |  |
| **３、专业课平台** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **课程模块** | | | | | | | **课程编号** | | | | | **课程名称(中英文）** | | | | | | | | **考核类型** | | | | | **学分** | | | | | **总学时** | | | | **课内学时** | | | | | **实践学时** | | | | | | | | | | | **修读学期** | | | | **分学期周学时分配表** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **备注** |
| **实验** | | | | **上机** | | | **其它** | | | | **1** | | | | **2** | | | | **3** | | | | **4** | | | | **5** | | | | **6** | | | **7** | | | | **8** | | |
| 专业核心课程模块 | | 城市轨道工程方向 | | | | | 1501100200 | | | | | 城市轨道交通规划 Planning of Urban Rail Trasit | | | | | | | | 考查 | | | | | 2 | | | | | 32 | | | | 32 | | | | | 0 | | | |  | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 2 | | | |  | | |  | | | |  | | |  |
| 1501100210 | | | | | 城市轨道工程  City track traffic Engineering | | | | | | | | 考试 | | | | | 2 | | | | | 32 | | | | 32 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |  |
| 1501100190 | | | | | 基础工程（B）  Foundation Engineering | | | | | | | | 考试 | | | | | 2 | | | | | 32 | | | | 32 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | |  | | | |  | | |  |
| 1501100230 | | | | | 城市轨道桥梁  Urban Rail Bridge | | | | | | | | 考试 | | | | | 2.5 | | | | | 40 | | | | 40 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |  |
| 1501100240 | | | | | 轨道交通线路设计  Rail Transit Design | | | | | | | | 考查 | | | | | 2 | | | | | 32 | | | | 32 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | |  | | | |  | | |  |
| 1501100250 | | | | | 地下铁道结构设计  Subway Design | | | | | | | | 考试 | | | | | 2.5 | | | | | 40 | | | | 40 | | | | | 0 | | | |  | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | 3 | | | |  | | |  |
| 1501100220 | | | | | 施工技术（E）  Construction Engineering | | | | | | | | 考试 | | | | | 3 | | | | | 48 | | | | 48 | | | | | 0 | | | |  | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | 4 | | | |  | | |  |
| **小 计** | | | | | | | | | | | | |  | | | | | **16** | | | | | **256** | | | | **256** | | | | | **0** | | | | **0** | | | **0** | | | |  | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **2** | | | | **14** | | | **7** | | | | **0** | | |  |
| 桥梁工程方向 | | | | | 1501100260 | | | | | 钢结构与钢桥（A)  Steel Structure and Steel Bridge（A) | | | | | | | | 考试 | | | | | 3.5 | | | | | 56 | | | | 56 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |  |
| 1501100270 | | | | | 桥涵水文（B)  Hydrology and Hydraulics for Bridge Engineering（B) | | | | | | | | 考查 | | | | | 1.5 | | | | | 24 | | | | 24 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |  |
| 1501100281 | | | | | 桥梁工程(A)Ⅰ  Bridge Engineering(A)Ⅰ | | | | | | | | 考试 | | | | | 3.5 | | | | | 56 | | | | 56 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |  |
| 1501100290 | | | | | 基础工程(B) Foundation Engineering | | | | | | | | 考查 | | | | | 2 | | | | | 32 | | | | 32 | | | | | 0 | | | |  | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | 3 | | | |  | | |  |
| 1501100282 | | | | | 桥梁工程(A)Ⅱ  Bridge Engineering(A)II | | | | | | | | 考查 | | | | | 2.5 | | | | | 40 | | | | 40 | | | | | 0 | | | |  | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | 3 | | | |  | | |  |
| 1501100300 | | | | | 施工技术(C) Construction Engineering | | | | | | | | 考试 | | | | | 3 | | | | | 48 | | | | 48 | | | | | 0 | | | |  | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | 4 | | | |  | | |  |
| **小 计** | | | | | | | | | | | | |  | | | | | **16** | | | | | **256** | | | | **256** | | | | | **0** | | | | **0** | | | **0** | | | |  | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **10** | | | **10** | | | | **0** | | |  |
| 建筑工程方向 | | | | | 1501100360 | | | | | 房屋建筑学 Building Construction | | | | | | | | 考查 | | | | | 3 | | | | | 48 | | | | 48 | | | | | 0 | | | |  | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |  | | |  |
| 1501100340 | | | | | 基础工程(A)  Foundation Engineering | | | | | | | | 考试 | | | | | 2 | | | | | 32 | | | | 32 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | |  | | | |  | | |  |
| 1501100310 | | | | | 钢结构设计原理  Principles of Steel Structures | | | | | | | | 考试 | | | | | 2.5 | | | | | 40 | | | | 40 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |  |
| 1501100350 | | | | | 施工技术(A)  Construction Engineering(A) | | | | | | | | 考试 | | | | | 3 | | | | | 48 | | | | 48 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |  |
| 1501100320 | | | | | 房屋混凝土及砌体结构设计  Design of concrete and masonry structure | | | | | | | | 考试 | | | | | 3.5 | | | | | 56 | | | | 56 | | | | | 0 | | | |  | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 5 | | |  | | | |  | | |  |
| 1501100330 | | | | | 建筑结构抗震设计  seismic design of building structure | | | | | | | | 考试 | | | | | 2 | | | | | 32 | | | | 32 | | | | | 0 | | | |  | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | 3 | | | |  | | |  |
| **小 计** | | | | | | | | | | | | |  | | | | | **16** | | | | | **256** | | | | **256** | | | | | **0** | | | | **0** | | | **0** | | | |  | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **3** | | | | **16** | | | **3** | | | |  | | |  |
| **课程模块** | | | | | | | **课程编号** | | | | | **课程名称(中英文）** | | **考核类型** | **学分** | | | | **总学时** | | | | | **课内学时** | | | | | | | **实践学时** | | | | | | | | | | | | | | | | **修读学期** | | | | **分学期周学时分配表** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **备注** | | |
| **实验** | | | | | | | **上机** | | | | **其它** | | | | | **1** | | | | **2** | | | | **3** | | | | **4** | | | | **5** | | | | **6** | | | | **7** | | | **8** | | | |
| 专业限选修课模块 | | 土木专业 | | | | | 1501100370 | | | | | 建筑法规  Building Law | | 考查 | 1 | | | | 16 | | | | | 16 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 4 | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501100380 | | | | | 荷载与结构设计方法  Load and Principle of Structural Design | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | |  | | | |  | | |
| 1501100390 | | | | | 工程经济学(A) Engineering Economics (A) | | 考查 | 1 | | | | 16 | | | | | 16 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 2 | | | |  | | | |  | | |  | | | |  | | |
| 1501100400 | | | | | 工程项目管理(A)  Management of engineering item(A) | | 考查 | 1 | | | | 16 | | | | | 16 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| **小 计** | | | | | | | | **5** | | | | **80** | | | | | **80** | | | | | | | **0** | | | | | | | **0** | | | | **0** | | | | |  | | | | **0** | | | | **0** | | | | **0** | | | | **2** | | | | **4** | | | | **0** | | | | **2** | | | **0** | | | |  | | |
| 城市轨道工程方向 | | | | | 1501100410 | | | | | 施工测量  Construction Survey | | 考查 | 2.5 | | | | 40 | | | | | 36 | | | | | | | 4 | | | | | | |  | | | |  | | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | | |  | | |  | | | |  | | |
| 1501100480 | | | | | 隧道工程(B) Tunnel Engineering (B) | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |  | | |
| 1501100510 | | | | | 计算机辅助设计(D) Computer Aided Desigen (D) | | 考查 | 1 | | | | 16 | | | | | 16 | | | | | | |  | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100420 | | | | | 工务工程(A) Railroad Protect(A) | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | |  | | | |  | | |
| 1501100500 | | | | | 专业英语(D) Profession English（D） | | 考查 | 1 | | | | 16 | | | | | 16 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100440 | | | | | 施工组织与概预算(A) Construction Organization and Budgetary (A) | | 考查 | 2.5 | | | | 40 | | | | | 40 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |
| 1501100490 | | | | | 土木工程测试技术（C）  Civil engineering test technology（C） | | 考查 | 2 | | | | 32 | | | | | 24 | | | | | | | 8 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |  | | |
| **小 计** | | | | | | | | **13** | | | | **208** | | | | | **196** | | | | | | | **12** | | | | | | | **0** | | | | **0** | | | | |  | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **3** | | | | **6** | | | | **11** | | | **0** | | | |  | | |
| 桥梁工程方向 | | | | | 1501100410 | | | | | 施工测量 Construction Survey | | 考查 | 2.5 | | | | 40 | | | | | 36 | | | | | | | 4 | | | | | | |  | | | |  | | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | | |  | | |  | | | |  | | |
| 1501100530 | | | | | 路基路面工程  Roadbed and Pavement Engineering | | 考查 | 2 | | | | 32 | | | | | 28 | | | | | | | 4 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | | |  | | |  | | | |  | | |
| 1501100520 | | | | | 施工组织与概预算(B) Construction Organization and Budgetary(B) | | 考查 | 1.5 | | | | 24 | | | | | 24 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100540 | | | | | 桥梁抗震及抗风  Seismic and Wind Prevention for Bridge | | 考查 | 1.5 | | | | 24 | | | | | 24 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100550 | | | | | 隧道工程 (A)  Tunnel Engineering (A) | | 考试 | 1.5 | | | | 24 | | | | | 24 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100560 | | | | | 计算机辅助设计(C) Computer Aided Desigen (C) | | 考查 | 1 | | | | 16 | | | | | 16 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100410 | | | | | 专业外语（B） Profession Engilsh (B) | | 考查 | 1 | | | | 16 | | | | | 16 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100530 | | | | | 土木工程测试技术（B）  Civil engineering test technology | | 考查 | 2 | | | | 32 | | | | | 24 | | | | | | | 8 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |
| **小 计** | | | | | | | | **13** | | | | **208** | | | | | **192** | | | | | | | **16** | | | | | | | **0** | | | | **0** | | | | |  | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **3** | | | | **7** | | | | **10** | | | **0** | | | |  | | |
| 建筑工程方向 | | | | | 1501100590 | | | | | 结构矩阵分析及程序设计 Matrix Analysis of Structure And Programming | | 考查 | 2 | | | | 32 | | | | | 18 | | | | | | | 14 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |  | | |
| 1501100600 | | | | | 施工组织与概预算(C) Construction Organization and Budgetary(C) | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100610 | | | | | 专业外语（A） Profession Engilsh (A) | | 考查 | 1 | | | | 16 | | | | | 16 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100620 | | | | | 计算机辅助设计(B) Computer Aided Desigen (B) | | 考查 | 1 | | | | 16 | | | | | 16 | | | | | | |  | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |
| 1501100630 | | | | | 高层建筑结构设计  Structure design of high-rise building | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | |  | | | |  | | |
| 1501100640 | | | | | 房屋建筑钢结构设计  Design of Steel Structures of Building | | 考试 | 3 | | | | 48 | | | | | 48 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |
| 1501100650 | | | | | 土木工程测试技术（A） Civil engineering test technology | | 考查 | 2 | | | | 32 | | | | | 22 | | | | | | | 10 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |  | | |
| **小 计** | | | | | | | | **13** | | | | **208** | | | | | **184** | | | | | | | **24** | | | | | | | **0** | | | | **0** | | | | |  | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **6** | | | | **15** | | | **0** | | | |  | | |
| 专业任选修课程模块 | | | | | | | 1501100660 | | | | | 现代测量技术 Modern Survey Technical | | 考查 | 2 | | | | 32 | | | | | 24 | | | | | | | 8 | | | | | | |  | | | |  | | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | | 4 | | | |  | | | |  | | |  | | | |  | | |
| 1501100670 | | | | | 预应力混凝土结构设计 Design of Prestressed Concrete Structures | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |  | | |
| 1501100680 | | | | | 大跨结构  Large span structure | | 考查 | 1.5 | | | | 24 | | | | | 24 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | | |  | | |  | | | |  | | |
| 1501100690 | | | | | 组合结构 Composite structure | | 考查 | 1.5 | | | | 24 | | | | | 24 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | | |  | | |  | | | |  | | |
| 1501100700 | | | | | 建筑结构概念设计 Conceptual design of building structure | | 考查 | 1.5 | | | | 24 | | | | | 24 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | |  | | | |  | | |
| 1501100710 | | | | | 结构加固技术  Strengthening technology of building Structures | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | |  | | | |  | | |
| 1501100720 | | | | | 桥涵水文 Hydrology and Hydraulics for Bridge Engineering | | 考查 | 1.5 | | | | 24 | | | | | 24 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 2 | | | |  | | |  | | | |  | | |
| 1501100730 | | | | | 岩石力学  rock mechnics | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |  | | |
| 1501100740 | | | | | 道路勘测设计 Road Survey and Design | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 3 | | | |  | | |  | | | |  | | |
| 1501100750 | | | | | 软弱地基处理 Flabbily Foundation Disposal | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |
| 1501100760 | | | | | 公路路面工程 Highway pavement engineering | | 考查 | 2 | | | | 32 | | | | | 32 | | | | | | | 0 | | | | | | |  | | | |  | | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | | 4 | | |  | | | |  | | |
| **小 计** | | | | | | | | | | | | | |  |  | | | |  | | | | |  | | | | | | |  | | | | | | |  | | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 学生至少应修学分数 | | | | | | | | | | | | | |  | 18 | | | |  | | | | |  | | | | | | |  | | | | | | |  | | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| **城轨总计** | | | | | | | | | | | | | |  | **141** | | | | **2248** | | | | | **1994** | | | | | | | **98** | | | | | | | **44** | | | | **112** | | | | |  | | | | **25** | | | | **26** | | | | **27** | | | | **24** | | | | **23** | | | | **20** | | | | **20** | | | **0** | | | |  | | |
| **建工总计** | | | | | | | | | | | | | |  | **141** | | | | **2248** | | | | | **1982** | | | | | | | **110** | | | | | | | **44** | | | | **112** | | | | |  | | | | **25** | | | | **26** | | | | **27** | | | | **24** | | | | **21** | | | | **22** | | | | **20** | | | **0** | | | |  | | |
| **桥梁总计** | | | | | | | | | | | | | |  | **141** | | | | **2248** | | | | | **1990** | | | | | | | **102** | | | | | | | **44** | | | | **112** | | | | |  | | | | **25** | | | | **26** | | | | **27** | | | | **24** | | | | **21** | | | | **17** | | | | **22** | | | **0** | | | |  | | |
| **４、实践教学平台** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **课程模块** | | | | **课程编号** | | | | | | | **课程名称(中英文）** | | | | | **考核类型** | | | | | **学分** | | | | | **总学时** | | | | | **课内学时** | | | | | **实践学时** | | | | | | | | | | | | **修读学期** | | | | **分学期周学时分配表** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **备注** | | |
| **实验** | | | | **上机** | | | | **其它** | | | | **1** | | | | **2** | | | | **3** | | | | **4** | | | | **5** | | | | **6** | | | **7** | | | | **8** | | |
| 课程实践模块 | 土木工程专业 | | | | 1500190160 | | | | | 军训  Military Training | | | | | | | 考查 | | | | | 0.5 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 1 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 集中 | |
| 1500190170 | | | | | 专业导论与就业前景（入学教育） | | | | | | | 考查 | | | | | 0.5 | | | | | 8 | | | | |  | | | | |  | | |  | | | | |  | | | | 1 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 分散 | |
| 1508190010 | | | | | 大学物理综合性、设计性实验（开放性）Integratedly Designed Experiment of College Physics | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 3 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| 1506190040 | | | | | 程序设计基础课程设计(VB语言)  Course Design of Programming Fundamentals(VB Language) | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 2 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| 1508190020 | | | | | 计算机绘图实习  Practice of Computer Cartography | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 2 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 理学院 | |
| 1501190010 | | | | | 工程地质实习 Geological Practice for Civil Engineering | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 4 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| 1501190020 | | | | | 测量实习(A)  Measure Practice(A) | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 4 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| **小 计** | | | | | | | | | | | | | | | | | **7** | | | | |  | | | | |  | | | | |  | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| 城轨方向 | | | | 1501190030 | | | | | 施工测量实习 Construction Measure Practice | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 11学分 | |
| 1501190040 | | | | | 基础工程课程设计 Curriculum Design of Foundation Engineering | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190110 | | | | | 城市轨道桥梁课程设计 Curriculum Design of C54Bridge Engineering | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190120 | | | | | 城市轨道工程课程设计  Curriculum Design of track Engineering | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190130 | | | | | 轨道交通线路设计课程设计  Curriculum Design of Rail Transit Design | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190140 | | | | | 地下铁道结构设计课程设计  Curriculum Design of Subway | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190100 | | | | | 施工组织与概预算(A)课程设计  Curriculum Design of construction organization and budgetary | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| **小 计** | | | | | | | | | | | | | | | | | **11** | | | | |  | | | | |  | | | | |  | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| 桥梁方向 | | | | 1501190030 | | | | | 施工测量实习 Construction Measure Practice | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 12学分 | |
| 1501190150 | | | | | 路基路面工程课程设计  Curriculum Design of Roadbed and Pavement Engineering | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190161 | | | | | 桥梁工程(A)Ⅰ课程设计  Curriculum Design of Bridge Engineering(A)Ⅰ | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190170 | | | | | 钢结构与钢桥课程设计  Curriculum Design of Steel Structure and Steel Bridge | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190180 | | | | | 施工组织及概预算（B）课程设计Curriculum Design of Construction Organization and Budgetary | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190190 | | | | | 基础工程(B)课程设计  Curriculum Design of Foundation Engineering | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190200 | | | | | 计算机辅助设计（C）课程设计 | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190162 | | | | | 桥梁工程(A)Ⅱ 课程设计  Curriculum Design of Bridge Engineering(A)II | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
|  | | | | **小 计** | | | | | | | | | | | | | | | | | **12** | | | | |  | | | | |  | | | | |  | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| 建工方向 | | | | 1501190220 | | | | | 房屋建筑学课程设计 Curriculum Design of Building Construction | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 10学分 | |
| 1501190270 | | | | | 基础工程(A)课程设计Curriculum Design of Foundation Engineering | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190230 | | | | | 房屋混凝土及砌体结构课程设计Curriculum Design of Design of concrete and masonry structure | | | | | | | 考查 | | | | | 3 | | | | | 3周 | | | | |  | | | | |  | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190240 | | | | | 施工组织与概预算（C）课程设计Curriculum Design  of construction organization and budgetary | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | |  | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190250 | | | | | 土木工程电算实训 CAD of Civil Engineer | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| 1501190260 | | | | | 房屋建筑钢结构设计课程设计Curriculum Design of Design of Steel Structures of Building | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | |  | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |
| **小 计** | | | | | | | | | | | | | | | | | **10** | | | | |  | | | | |  | | | | |  | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| 专业实践模块 | | | | | 1501190280 | | | | | 认识实习  Cognition Practice | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | | 1周 | | |  | | | | |  | | | | 5 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 土木 | |
| 1501190290 | | | | | 施工实习(B)  Construction Practice(B) | | | | | | | 考查 | | | | | 2 | | | | | 2周 | | | | |  | | | | | 2周 | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 城轨 | |
| 1501190300 | | | | | 施工实习(C)  Construction Practice(C) | | | | | | | 考查 | | | | | 1 | | | | | 1周 | | | | |  | | | | | 1周 | | |  | | | | |  | | | | 7 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 桥梁 | |
| 1501190310 | | | | | 施工实习(A)  Construction Practice(A) | | | | | | | 考查 | | | | | 3 | | | | | 3周 | | | | |  | | | | | 3周 | | |  | | | | |  | | | | 6 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | | 建工 | |
| 1500190040 | | | | | 毕业设计(含毕业实习) Graduate Practice | | | | | | | 考查 | | | | | 16 | | | | | 16周 | | | | |  | | | | | 16周 | | |  | | | | |  | | | | 8 | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| 1500190180 | | | | | 专业创新创业实践 | | | | | | | 考查 | | | | | 2 | | | | |  | | | | |  | | | | |  | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
|  | | | | | **小 计** | | | | | | | | | | | | | | | | | **39** | | | | |  | | | | |  | | | | |  | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| 素质拓展模块 | | | | | | 1500190190 | | | | 素质拓展  Essential-Quality Expansion | | | | | | |  | | | | | 4 | | | | | 0周 | | | | |  | | | | |  | | |  | | | | |  | | | | 1~8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 分散 | |
| **小 计** | | | | | | | | | | |  | | | | | **4** | | | | |  | | | | |  | | | | |  | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| **合 计** | | | | | | | | | | | | | | | | |  | | | | | **43** | | | | |  | | | | |  | | | | |  | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |
| **总 计** | | | | | | | | | | | | | | | | |  | | | | | **184** | | | | |  | | | | |  | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | | |  | | |  | | | |  | | |  | |