

安全工程专业培养方案

一、专业培养目标

本专业面向国民经济建设和社会需求，培养德、智、体、美、劳全面发展，具备优良的思想政治素质、人文与自然科学素养，掌握安全科学、安全管理、安全技术和职业健康等方面的理论知识和技能，能够在安全技术及工程、安全监察与管理、应急管理、救援、安全教育与培训、安全评价与咨询、职业健康监测、安全科学研究等领域，从事研究、管理、监察、设计、检测、评价与培训等工作的“管理+技术”型高级专业人才。经过5年左右的实际工作，能够承担企业或政府部门安全管理或技术岗位的工作。目标分解如下：

(1) 具有优良的思想政治素质和人文素养，具有艰苦朴素、求真务实的优良品质，具有强烈的社会责任感与崇高的职业道德精神。

(2) 掌握数学、自然科学以及相应的工程基础知识，掌握安全科学、安全管理、安全技术和职业健康等方面的知识和技能。

(3) 具有系统性思维、创新性潜质和国际化视野，具有较强的团队合作精神、领导力以及交流能力。

(4) 具有终身学习的理念，并通过继续教育或其它学习途径能够自我更新知识和提升能力，以不断适应社会发展和环境变化。

(5) 具备自主学习、研究和解决安全工程专业复杂工程问题的能力，具备利用先进的工具对安全工程专业复杂工程问题进行分析、监测、预测、评价以及防治的能力。

二、毕业要求

安全工程专业在我校“特色加精品”的办学理念要求下，旨在培养“品德优良、基础厚实、知识广博、专业精深”的安全工程专业人才。依据国家“卓越工程师培养计划”要求、国际工程教育专业认证以及国家专业目录和专业规范要求，坚持以学生全面发展为宗旨，通识教育、专业教育相结合与创新创业教育相结合，长远目标和就业目标相结合，优化课程体系，制定了全面、详细的培养方案。经过四年学习，毕业生应获得以下几方面的知识、能力和素质：

(1) 工程知识：具备应用数学、自然科学、工程基础和安全工程专业知识解决现代社会发展所面临的安全工程专业复杂工程问题的能力。掌握数学、自然科学、工程基础知识与安全工程专业知识，用于安全工程问题的表述；能针对具体安全工程问题应用专业知识进行分析与处理；能够提出解决安全工程专业复杂工程问题的可行方案，并进行比较与综合。

(2) 问题分析：能够应用所学的数学、自然科学、工程科学和安全科学的基本原理，识别、表达、并能通过中外文献检索、资料查询及运用现代信息技术了解安全工程专业问题的研究现状、解决方法，分析各相关领域中安全工程、职业健康等方面的复杂工程问题，以获得有效结论。能够将数学、自然科学、工程科学和安全科学的基本原理和逻辑思维，识别和判断安全工程专业复杂工程问题的关键环节，并基于相关科学原理正确表达；能够通过信息检索、中外文献研究分析和相关科学、工程原理，识别安全工程专业复杂工程问题的多种解决方案，并能够寻求解决问题的有效途径和可替代的解决方案；借助数学、自然科学、工程科学知识和文献资料，能够研究、分析安全工程、职业健康等方面复杂工程方案中的影响因素、关键环节和方案可行性，并进行多方案的技术经济对比分析和获得有效结论。

(3) 设计/开发解决方案：能够针对工矿企业或建筑施工、石油化工、企业生产与经营、公共安全等现代社会发展领域中的复杂安全工程问题，综合运用安全工程理论和技术手段设计满足特定需求的安全工程、安全管理控制等系统和过程，以及针对具体安全工程问题的专项技术方案，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、文化及环境因素。针对工矿企业或建筑施工、石油化工、企业生产与经营、公共安全等现代社会发展领域中的安全工程专业复杂工程问题，能够掌握安全工程相关技术手段，了解影响设计目标和技术方案的各种因素；能够针对安全工程实践的特定需求，完成设计方案、技术方案等关键环节的设计，并能够在设计环节考虑新技术、新理念，体现创新意识；能够针对不同的安全工程实践需求在设计方案中考虑社会、安全、健康、法律、文化以及环境等因素，制定出满足国家及社会经济建设需求的合理方案。

(4) 研究：能够基于科学原理并采用科学方法对安全工程专业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。能够运用科学原理，通过文献研究和相关方法，调研、分析安全工程专业复杂工程问题的关键技术和解决方案；基于安全工程专业理论、针对安全工程专业复杂工程问题选择合理的技术路线、设计实验方案，进行创新型实验，包括实验组织、数据获取、数据处理；能够对实验数据进行分析与解释，并通过信息综合得到合理有效的结论。

(5) 使用现代工具：能够针对安全工程专业复杂工程问题，开发、选择与使用恰当的技术手段、计算机模拟及仿真技术、相关资源、现代工程工具和信息技术工具，包括对安全工程专业复杂工程问题的预测与模拟，并能够理解其局限性。掌握现在安全工程相关仪器、设备和先进信息处理技术工具，能够针对安全工程复杂工程问题，选择、使用恰当的技术手段、计算机模拟及仿真技术、相关资源、现代工具以及信息技术工具，理解其局限性，能对复杂工程问题进行分析、计算和设计；针对安全工程复杂工程问题方案，能够选择、使用专业软硬件工具，开发满足特定需求的专门工具，用于工程方案的优化、预测和模拟，并理解其局限性。

(6) 工程与社会：熟悉安全工程专业领域相关的国家、行业标准、工程技术规范和国家相关政策及法律法规，能够基于工程背景知识进行合理分析，评价安全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，并理解应承担的责任。理解安全工程的社会作用及安全工程活动对社会、健康、安全、法律及文化的影响；在安全工程实践中具备综合考虑多种制约因素的意识，能够合理的分析、评价和解决安全工程活动对社会、健康、安全、法律以及文化等方面可能产生的风险，并理解应承担的责任。

(7) 环境和可持续发展：能够理解和评价针对安全工程实践对环境、社会可持续发展的影响。理解和评价安全工程实践对环境保护、社会可持续发展的影响，认识工程实践在环境保护和可持续发展中的地位和作用；了解安全工程实践与环境保护和可持续发展等方面相关的方针政策、法律法规，理解和评价工程实践对环境、社会可持续发展造成的损害和隐患，并制定合理策略降低对人类和环境造成的损害和隐患。

(8) 职业规范：具有坚定正确的政治方向和世界观、人生观、价值观；具有较好的人文社会科学素养、较强的社会责任感，能够在工程实践中理解并遵守工程职业道德和规范，履行责任；掌握科学锻炼身体的基本技能，受到必要的军事训练，具有良好的身体、心理素质。了解中国国情，具有爱国主义情怀和人文社会科学素养，理解个人与社会的关系，树立正确的世界观、人生观、价值观；具备法律意识和社会责任感，理解安全工程领域工作的职业性质，掌握行业相关的规范和法规，在工程实践中自觉遵守职业道德和法律法规。

(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，具有一定的组织管理能力、表达能力、人际交往能力以及在团队中发挥作用的能力。具备良好的组织协调能力和人际交往能力，能够与其他学科的成员有效沟通与合作；能够独立承担安全工程的专项任务，能够在多学科组成的团队中承担个体、团队成员或负责人的角色。

(10) 沟通：能够就安全工程专业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 design 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。能够运用安全工程及相关领域的知识，针对安全工程专业复杂工程问题

与业界同行、社会公众进行有效沟通、交流和回应质疑，掌握研究报告的绘制撰写方法和陈述发言技巧；了解安全工程学科的国际发展趋势、研究热点，理解和尊重世界不同文化的差异性和多样性，具备一定的国际视野。

(11) 项目管理：理解并掌握工程管理原理与经济决策方法，能够将系统思维和方法用于安全检测、工程设计、评估、监测、应急等实践活动，并在多学科环境中应用，具备从事公共安全、工矿企业或建筑施工、石油化工、企业生产与经营等多学科环境的安全方案设计、安全生产组织、安全教育和管理等的基本能力。理解并掌握安全工程管理原理与经济决策方法；能够在多学科环境下，将系统思维和方法用于安全检测、工程设计、评估、监测、应急等实践活动，具备从事公共安全、工矿企业或建筑施工、石油化工、企业生产与经营等多学科环境的安全方案设计、安全生产组织、安全教育和管理等的基本能力。

(12) 终身学习：能够针对安全工程行业的变化需求，具有自主学习和终身学习的意识，掌握自主有效的学习方法；具备综合应用各种手段收集资料、拓展专业知识领域、不断学习、适应安全工程新发展的能力。对于自我探索和学习的必要性有正确的认识，并能表现出自我探索和学习成效；具有自主学习的能力，不断学习、适应安全工程发展，具备对不断变化的技术问题的理解、归纳总结和提出问题等能力。

三、主干学科

安全科学与工程。

四、学制与学位

学制四年。学生修满规定的最低毕业学分，达到毕业后要求后，授予理学学士学位。

五、核心课程

专业核心课程：职业卫生工程学、毒害控制与辐射安全、安全人机工程、电气与机械安全工程学、特种设备安全、防火防爆工程学、消防工程、通风工程学、矿山灾害防治、建筑安全工程学、危险化学品管理、石油化工安全、应急管理与救援。

主要实践性教学课程：教学实习、矿山安全设计、防火防爆课程设计、安全评价实习、压力容器安全设计、工程 CAD 制图实训、工业通风设计、职业卫生设计、消防工程课程设计、专业实习、建筑安全工程实习、危险化学品实习、石油化工安全实习、特种设备安全实习、安全工程毕业设计（论文）。

Undergraduate Program in Safety Engineering

1. Academic Objectives

To meet the needs of national economic construction and social development, this major cultivates "management-technology" type high-level professionals, which is engaged in the research, management, supervision, design, test, evaluation and training etc. in safety technology and engineering, safety supervision and management, emergency management and rescue, safety education and training, safety evaluation and consultation, occupational safety and health monitoring, scientific research and other fields. Their morality, intelligence, physical education, beauty and labor will be fully developed, they will possess excellent ideological and political quality, humanistic and natural science literacy and master theoretical knowledge and skills of safety science, safety management, safety technology and occupational health, etc. After about 5 years of practical work, they can be able to undertake safety management or technical positions in enterprises or government departments. The objective is broken down as follows:

(1) Students will have an excellent ideological and political quality and humanistic quality, a fine quality of hard work and plain living, realistic and pragmatic and a strong sense of social responsibility and lofty professional ethics.

(2) Students will master mathematics, natural science and the corresponding basic knowledge of engineering, and master the knowledge and skills of safety science, safety management, safety technology and occupational health.

(3) Students will have systematic thinking, innovative potential, international vision, strong team spirit, leadership and communication skills.

(4) Students will have the concept of lifelong learning, as well as be able to update their knowledge and improve their abilities through a continuing education or other learning channels so that they can constantly adapt to social development and environmental changes.

(5) Students will have the ability to independently study, research and solve complex engineering problems in safety engineering, as well as the ability to analyze, monitor, predict, evaluate and prevent complex engineering problems in safety engineering with advanced tools.

2. Graduation Requirements

Under the educational philosophy of "characteristic plus quality" of our school, the safety engineering major aims at cultivating safety engineering professionals with "good moral character, solid foundation, extensive knowledge and profound specialty". Accordance with the requirements of national "outstanding engineers training plan", the international engineering education professional certification and the national specialty catalog and specification requirements, this major adheres to the objective of students' all-round development, the combination of general education, professional education and innovation entrepreneurship education, the combination of long-term goals and employment goals and the optimization of curriculum system, a comprehensive and detailed training plan is set up.

After four years of study, graduates should acquire the following knowledge, ability and quality:

(1) Knowledge of engineering: Students are required to have the ability to apply mathematics, natural science, engineering foundation and safety engineering expertise to solve complex engineering problems generated by modern social development. Students should master basic knowledge of mathematics, natural science, engineering and professional knowledge of safety engineering for the presentation of safety engineering problems. Students can apply their professional knowledge to analyze and deal with specific safety engineering problems. Students are able to propose feasible solutions to complex engineering problems in the safety engineering major, and compare and synthesize them.

(2) Problem Analysis: Students are required to apply mathematics, natural science, engineering science,

and the basic principle of safety science to identify and express information, they need to understand the research status and solutions of safety engineering professional problems through Chinese and foreign literature search, data query and the use of modern information technology, as well as analyze complex engineering problems in various related fields, such as safety engineering and occupational health, so as to obtain effective conclusions. Students are able to identify and judge the key links of complex engineering problems in safety engineering majors by applying the basic principles and logical thinking of mathematics, natural science, engineering science and safety science, and correctly express them based on relevant scientific principles. Students can identify multiple solutions to complex engineering problems in safety engineering majors through information retrieval, Chinese and foreign literature research and analysis, and related scientific and engineering principles, and seek effective ways and alternative solutions to solve problems. With the help of mathematics, natural science, engineering science knowledge and literature materials, students can study and analyze the influencing factors, key links and feasibility of complex engineering schemes in safety engineering and occupational health, and carry out technical and economic comparative analysis of multiple schemes and obtain effective conclusions.

(3) Design/develop solutions: Students are required to industrial and mining enterprises or construction, petrochemical industry, enterprise production and management, public safety and other modern complex safety engineering issue in the field of social development, the integrated use of theory of safety engineering and technology design to meet the specific needs of the safety engineering, safety management control systems and processes, as well as special technical solutions for specific safety engineering problem, and can be innovative in the design process considering social, health, safety, legal, cultural and environmental factors. Aiming at the complex engineering problems of safety engineering major in the fields of modern social development such as industrial and mining enterprises or construction, petrochemical industry, enterprise production and operation, public safety and so on, students can master the relevant technical means of safety engineering and understand the various factors that affect the design objectives and technical solutions. Students can complete the design of design scheme, technical scheme and other key links according to the specific requirements of safety engineering practice, and can consider new technologies and new ideas in the design process, reflecting the sense of innovation. Students are able to take social, safety, health, legal, cultural and environmental factors into consideration in the design scheme according to different safety engineering practice needs, and develop reasonable schemes to meet the needs of national and social and economic construction.

(4) Research: Students are required to research complex engineering problems in safety engineering based on scientific principles and using scientific methods, including designing experiments, analyzing and interpreting data, and drawing reasonable and effective conclusions through information synthesis. Students are required to apply scientific principles to research and analyze key technologies and solutions to complex engineering problems in safety engineering specialisms through literature research or related methods. Students can choose a reasonable research route and design an experimental programme based on safety engineering professional theories and for complex engineering problems in safety engineering, and conduct innovative experiments, including experimental organisation, data acquisition and data processing. Students are able to analyze and interpret experimental data and obtain reasonable and valid conclusions through information synthesis.

(5) Use modern tools: Students are required to develop, select and use appropriate technical means, computer simulation and simulation technology, related resources, modern engineering tools and information technology tools for complex engineering problems in the safety engineering major, including prediction and simulation of complex engineering problems in the safety engineering major, and understand their limitations. students are required to master relevant instruments now safety engineering tools, equipment, and advanced information processing technology, can according to safety engineering complex engineering problem, selection and use of appropriate technology, computer modeling and simulation technology, the

related resources, modern tools and information technology tools, understand its limits, to analyze the complex engineering problems, calculation and design. Students are required to select and use professional software and hardware tools to solve complex engineering problems in safety engineering, develop specialized tools to meet specific requirements for optimization, prediction and simulation of engineering solutions, and understand their limitations.

(6) Engineering and Society: Students are required to be familiar with national and industry standards in the fields of safety engineering, engineering specifications and relevant national policies and laws and regulations, they can carry on the reasonable analysis based on the engineering background, evaluation of safety engineering practice and complex engineering solutions to problems of social, health, safety, and legal and the influence of culture, and understand the responsibility. Students are required to understand the social role of safety engineering and the social, health, safety, legal and cultural impacts of safety engineering activities. Students are required to have an awareness of the multiple constraints in safety engineering practice, be able to reasonably analyze, evaluate and address the social, health, safety, legal and cultural risks that may arise from safety engineering activities, and understand their responsibilities.

(7) Environment and sustainable development: Students are required to understand and evaluate the impact of safety engineering practice on environmental protection and sustainable development of society. Students are required to understand and evaluate the impact of safety engineering practice on environmental protection and sustainable development of society, and recognize the status and role of engineering practice in environmental protection and sustainable development. Students are required to understand the policies, laws and regulations related to safety engineering practice and environmental protection and sustainable development, etc. as well as to understand and evaluate the damage and potential hazards caused by engineering practice to the environment and sustainable development of society and develop reasonable strategies to reduce the damage and potential hazards caused to humans and the environment.

(8) Professional Standards: Students are required to have a firm and correct political direction, world outlook, outlook on life and values and have good humanistic and social science literacy, strong sense of social responsibility, they are able to understand and abide by engineering professional ethics and norms in engineering practice and fulfill responsibilities. They can master the basic skills of scientific physical exercise, receive necessary military training and have good physical and psychological quality. Students are required to Understand China's national conditions, have patriotism and humanities and social science literacy, understand the relationship between the individual and society, and establish a correct world view, outlook on life and values. Students are required to possess a sense of legal awareness and social responsibility, and understand the occupational nature of work in the safety engineering field, and master the relevant codes and regulations of the safety engineering industry, and consciously abide by professional ethics and laws and regulations in engineering practice.

(9) Individual and Team: Students are required to play the roles of individual, team member and leader in a multi-disciplinary team, with certain organizational and management skills, expression skills, interpersonal skills and the ability to play a role in the team. Students are required to good organizational and coordination skills, presentation and interpersonal skills, and the ability to communicate and cooperate effectively with members of other disciplines. Students are required to ability to independently undertake special tasks in safety engineering and to assume the role of individual, team member or leader in a multidisciplinary team.

(10) Communication: Students are required to be able to effectively communicate with industry colleagues and the public on complex engineering issues in the safety engineering profession, including writing reports and design documents, making presentations, and clearly expressing or responding to instructions, they need to have a certain international vision so that they can communicate and exchange in the cross-cultural background. Students can use the knowledge of safety engineering and related fields to effectively communicate, exchange and respond to questions with their peers in the industry and the public

regarding complex engineering problems in the safety engineering specialty, and master the methods of drawing and writing research reports and the skills of presentation and presentation. Students are required to understand the international development trends and research hotspots of civil engineering disciplines, understand and respect the differences and diversity of different cultures in the world, and have a certain international perspective.

(11) Project Management: Students are required to understand and master the principles of project management and economic decision-making methods, as well as can apply systems thinking and methods to practical activities such as safety inspection, engineering design, evaluation, monitoring, emergency response and apply them in a multidisciplinary environment, they should have the basic ability of safety program design, safety production organization, safety education and management in the multidisciplinary environment of public safety, industrial and mining enterprises or construction, petrochemical industry and enterprise production and operation. Students are required to understand and master the principles of safety engineering management and economic decision-making methods. In a multidisciplinary environment, students can apply system thinking and method for safety testing, engineering design, evaluation, monitoring and emergency practice and possess the basic ability to engage in safety program design, safety production organization, safety education and management in multidisciplinary environments, such as public safety, industrial and mining enterprises or building construction, petrochemicals, enterprise production and operation, etc.

(12) Lifelong Learning: Students are required to have the awareness of autonomous learning and lifelong learning, and master autonomous and effective learning methods to meet the changing needs of the safety engineering industry; as well as have the ability to collect data, expand professional knowledge, learn constantly and adapt to new development of safety engineering by comprehensive application of various means. Students are required to have a sound understanding of the need for self-exploration and learning, and be able to demonstrate the effectiveness of self-exploration and learning. Students are required to have the ability to learn on their own, to continuously learn and adapt to safety engineering developments, to understand, summarize, and ask questions about changing technical issues.

3. Main disciplines

Safety Science and Engineering.

4. Length of Schooling and Degree

The length of schooling is four years of full-time study. Students will be awarded the Bachelor Degree of Engineering when they have completed the required minimum credits and have met all other requirements.

5. Core Courses

Professional core courses: Engineering of Occupational Health, Poison Control and Radiation Protection, Safety Ergonomics, Electric and Mechanic Safety Engineering, Special Purpose Equipment Safety, Fire and Explosion Prevention, Construction Fire Prevention Engineering, Ventilation Engineering, Mine Safety, Construction Safety Engineering, Hazardous Chemicals Management, Petrochemical Safety, Emergency Management and Rescue.

Main practical teaching courses: Teaching Practice, Design of Mine Safety, Design of Fire & Explosion Prevention, Practice on Safety Assessment, Design of Pressure Vessel Safety, Mechanical CAD Training, Design of Ventilation Systems, Design of Occupational Health, Design of Fire Prevention, Professional Practice, Practice on Construction Safety, Practice on Hazardous Chemicals and Oil Industrial Safety, Practice on Petrochemical Safety, Practice on Special Purpose Equipment Safety, Graduation Design (Thesis).

六、最低毕业总学分要求及学分配 (Minimum Required Credits and Distribution)

课程模块 Course module	课程类别 Course Classification	学时数 Hours	学分 Credits	学期 Semester										
				1	2	1夏	3	4	2夏	5	6	3夏	7	8
通识教育 Liberal Education	通识教育必修课程 Required Courses of General Education	730	40	11.25	13.25		4.25	5.25	1	3.25	1.25		0.25	0.25
	通识教育选修课程 Selective Courses of General Education	192	12											
专业教育 Professional Education	学科基础课程 Disciplinary Fundamental Courses	880	55	13	10.5		11.5	11		7	2			
	专业核心课程 Specialized Fundamental Courses	400	25							9	11		5	
	专业拓展课程 Specialized Development	64	4											
实践教育 Practical Education	课程实践 Course Practice	37周 +128学时	37		3	4	1		4	8	4	5	2	6
	课外实践 Extracurricular practice	--	6							--				
必修课总学分 Required course credits										157				
选修课总学分 Elective course credits										22				
最低毕业总学分 Total Credits										179				

七、课程设置 (Curriculum)

1、通识教育必修课程 (Required Courses of General Education): 730 学时 (730 Hours), 40 学分 (40 Credits)

课程代码 Course Code	课程名称 Course Name	总学时 Hours	学分 Credits	讲课学时 Lecture	实验学时 Experiment	线上学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
GR181009	思想道德与法治 Ideological Morality and Rule of Law	48	3	40	8		考试 Exam	1	
GR181008	中国近现代史纲要 Essentials of Modern Chinese History	48	3	40	8		考试 Exam	2	
GR182014	马克思主义基本原理 Fundamental Principles of Marxism	48	3	40	8		考试 Exam	3	
GR183004	毛泽东思想和中国特色社会主义理论体系概论 Introduction to Mao Zedong Thoughts and Theoretical System of the Chinese Characteristic Socialism	64	4	48	16		考试 Exam	4	
GR181012	习近平新时代中国特色社会主义思想概论 Introduction to Xi Jinping Thoughts on Socialism with Chinese Characteristics in the New Era	32	2	28	4		考试 Exam	5	
GR181013	形势与政策 (1) Situation and Policy(1)	4	0.25	4			考查 Term Paper	1	
GR181014	形势与政策 (2) Situation and Policy(2)	4	0.25	4			考查 Term Paper	2	
GR181015	形势与政策 (3) Situation and Policy(3)	4	0.25	4			考查 Term Paper	3	
GR181016	形势与政策 (4) Situation and Policy(4)	4	0.25	4			考查 Term Paper	4	
GR181017	形势与政策 (5) Situation and Policy(5)	4	0.25	4			考查 Term Paper	5	
GR181018	形势与政策 (6) Situation and Policy(6)	4	0.25	4			考查 Term Paper	6	
GR181019	形势与政策 (7) Situation and Policy(7)	4	0.25	4			考查 Term Paper	7	
GR181020	形势与政策 (8) Situation and Policy(8)	4	0.25	4			考查 Term Paper	8	
GR301004	大学生职业生涯规划与就业指导 (1) Career Planning and Employment Guidance for University Students (1)	20	1	16	4		考试 Exam	2	

课程代码 Course Code	课程名称 Course Name	总学时 Hours	学分 Credits	讲课学时 Lecture	实验学时 Experiment	线上学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
GR303005	大学生职业生涯规划与就业指导(2) Career Planning and Employment Guidance for University Students (2)	18	1	12	6		考试 Exam	6	
GR301005	大学生心理素质教育(1) Mental Health (1)	16	1	16			考查 Term Paper	1	
GR303005	大学生心理素质教育(2) Mental Health (2)	16	1	16			考查 Term Paper	5	
GR302008	军事理论 Military Theory	36	1	36			考试 Exam	2夏	
GR081071	大学英语(1) College English (1)	64	4	64			考试 Exam	1	
GR081072	大学英语(2) College English (2)	32	2	32			考试 Exam	2	
GR081067	大学英语素质拓展课 Competence-oriented Education for College English	32	2	32			考试 Exam	2	
GR141005	体育(1)(系列课程) Physical Education (1)	32	1		32		考试 Exam	1	
GR141006	体育(2)(系列课程) Physical Education (2)	32	1		32		考试 Exam	2	
GR142007	体育(3)(系列课程) Physical Education (3)	32	1		32		考试 Exam	3	
GR142008	体育(4)(系列课程) Physical Education (4)	32	1		32		考试 Exam	4	
GR041001	大学计算机 College Computer	32	2	16	16		考试 Exam	1	
GR041003	程序设计基础 A Fundamentals of Programming A	64	4	24	24	16	考试 Exam	2	
总计 Total		730	40	492	222	16			

2、通识教育选修 (Selective Courses of General Education): 192 学时 (192Hours), 12 学分 (12 Credits)

序号 No.	课程类别 Courses Classification	课程名称 Courses Name	学分 Credits	考核方式 Assessment	开课学期 Semester	备注 Notes
1	人文社科类 (含在线课程) Humanities and Social Sciences Courses (Inc. Online courses)	见附件 1	7	考查 Term Paper	2-8	4 个类别中选修 7 个学分, 其中,《大学生安全教育》(1 学分) 必选。
2	自然科学类 (含在线课程) Natural Science Courses (Inc. Online Courses)	见附件 2		考查 Term Paper	2-8	
3	自然文化类 Natural Culture Courses	见附件 3		考查 Term Paper	2-8	
4	体育与健康类 Sports and Health Courses	见附件 4		考查 Term Paper	5-8	
5	创新创业教育类 (含在线课程) Innovation and Entrepreneurship Courses (Inc. Online Courses)	见附件 5-6	3	考查 Term Paper	2-8	选修 3 个学分, 其中《新生研讨课》(1 学分) 必选。
6	审美与艺术类 Aesthetics and Art Courses	见附件 7	2	考查 Term Paper	2-4	
总计 Total			12			

3、学科基础课程 (Disciplinary Fundamental Courses): 880 学时 (880 Hours), 55 学分 (55 Credits)

课程代码 Course Code	课程名称 Course Name	总学时 Hours	学分 Credits	讲课学时 Lecture	实验学时 Experiment	线上学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
DR191003	高等数学 B (1) Advanced Mathematics B(1)	96	6	96			考试 Exam	1	
DR191004	高等数学 B (2) Advanced Mathematics B(2)	64	4	64			考试 Exam	2	
DR192005	线性代数 Linear Algebra	32	2	32			考试 Exam	3	
DR192006	概率论与数理统计 Probability and Mathematics Statistic	48	3	48			考试 Exam	4	
DR191008	大学物理 (1) College Physics (1)	48	3	48			考试 Exam	2	
DR192009	大学物理 (2) College Physics (2)	48	3	48			考试 Exam	3	
DR191010	大学化学 College Chemistry	48	3	48			考试 Exam	1	
DR192012	分析化学 Analytical Chemistry	56	3.5	44	12		考试 Exam	3	
DR021002	工程图学 Engineering Drawing	48	3	48			考试 Exam	1	
DR042127	电工电子技术 B Electrical and Electronic Technology B	48	3	34	14		考试 Exam	3	
DR021029	工程力学 Engineering Mechanics	56	3.5	52	4		考试 Exam	2	
DR022335	工程热力学 Engineering Thermodynamics	32	2	30	2		考试 Exam	4	
DR022031	安全法律与法规 Laws and Regulation on Safety	32	2	30	2		考查 Term Paper	4	
DR022032	可靠性理论 Reliability Theory	32	2	30	2		考试 Exam	4	
DR023336	安全监测与控制 Safety Surveillance and Control	32	2	26	6		考试 Exam	5	

课程代码 Course Code	课程名称 Course Name	总学时 Hours	学分 Credits	讲课学时 Lecture	实验学时 Experiment	线上学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
DR022005	工程流体力学 Engineering Fluid Mechanics	32	2	28	4		考试 Exam	4	
DR023034	系统安全工程 System Safety Engineering	48	3	44	4		考试 Exam	5	
DR023036	安全管理学 Safety Management	32	2	30	2		考试 Exam	6	
DR023037	安全行为学 Safety Psychology and Behavior Science	32	2	30	2		考试 Exam	5	
DR020007	安全工程专业导论 Introduction to Safety Engineering	16	1	16			考查 Term Paper	1	
总计 Total		880	55	826	54				

4、专业核心课程 (Specialized Core Courses): 400 学时 (400 Hours), 25 学分 (25 Credits)

课程代码 Course Code	课程名称 Course Name	总学时 Hours	学分 Credits	讲课学时 Lecture	实验学时 Experiment	线上学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
SR023086	职业卫生工程学 Engineering of Occupational Health	32	2	28	4		考试 Exam	6	
SR023087	毒害控制与辐射安全 Poison Control and Radiation Protection	32	2	32			考试 Exam	6	
SR023088	安全人机工程 Safety Ergonomics	32	2	28	4		考试 Exam	5	
SR023089	电气与机械安全工程学 Electric and Mechanic Safety Engineering	48	3	46	2		考试 Exam	5	
SR023090	特种设备安全 Special Purpose Equipment Safety	32	2	30	2		考试 Exam	5	
SR023091	防火防爆工程学 Fire and Explosion Prevention	32	2	28	4		考试 Exam	5	
SR023092	消防工程 Construction Fire Prevention Engineering	32	2	30	2		考试 Exam	6	
SR023093	通风工程学 Ventilation Engineering	32	2	28	4		考试 Exam	6	

课程代码 Course Code	课程名称 Course Name	总学时 Hours	学分 Credits	讲课学时 Lecture	实验学时 Experiment	线上学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
SR023337	矿山灾害防治 Mine Disaster Prevention	32	2	32			考试 Exam	6	
SR024095	建筑安全工程学 Construction Safety Engineering	32	2	32			考查 Term Paper	7	
SR024338	危险化学品安全管理 Hazardous Chemicals Safety Management	16	1	16			考查 Term Paper	7	
SR023339	石油化工安全 Petrochemical Safety	16	1	16			考查 Term Paper	6	
SR024098	应急管理与救援 Emergency Management and Rescue	32	2	30	2		考查 Term Paper	7	
总计 Total		400	25	376	24				

5、专业拓展课程 (Specialized Development Courses): 任选 64 学时 (64 Hours), 4 学分 (4Credits)

课程代码 Course Code	课程名称 Course Name	总学时 Hours	学分 Credits	讲课学时 Lecture	实验学时 Experiment	线上学时 Online	考核方式 Assessment	开课学期 Semester	备注 Notes
SS023340	安全管理学前沿 Frontier of Safety Management	16	1	16			考查 Term Paper	6	学院内 选修
SS024341	智能安全工程 Intelligent Safety Engineering	16	1	16			考查 Term Paper	7	
SR023097	事故调查与案例分析 Accident Investigation and Case Studies	32	2	32			考查 Term Paper	6	
SR024238	工程项目管理与法规 Engineering Project Management and Regulations	32	2	32			考查 Term Paper	7	
SS024342	安全经济学概论 Introduction to Safety Economics	16	1	16			考查 Term Paper	7	
SS024264	地质灾害防治 B Geologic Hazard Control B	24	1.5	24			考查 Term Paper	7	
总计 Total		64	4						

6、课程实践 (Course Practice): 37 周 +128 学时 (37 weeks and 128 hours), 37 学分 (37 Credits)

课程代码 Course Code	课程名称 Course Name	周数 (学时) Week(hour)	学分 Credits	考核方式 Assessment	开课学期 Semester	备注 Notes
PR311003	军事技能训练 Military Theory and Practice	2 周	2	考查 Term Paper	1 夏	
PR181010	思想政治社会实践 Political Social Practice	32 学时	2	考查 Term Paper	1 夏	
PR191045	实验物理 (1) Physics Experiments (1)	24 学时	1	考试 Exam	2	
PR192046	实验物理 (2) Physics Experiments (1)	24 学时	1	考试 Exam	3	
PR191047	实验化学 Chemistry Experiments	48 学时	2	考试 Exam	2	
PR022342	安全工程认识实习 Safety Engineering Cognition Practice	4 周	4	考查 Term Paper	2 夏	
PR023343	矿山安全设计 Design of Mine Safety	1 周	1	考查 Term Paper	5	
PR023142	防火防爆课程设计 Design of Fire & Explosion Prevention	1 周	1	考查 Term Paper	5	
PR023143	安全评价实习 Practice on Safety Assessment	2 周	2	考查 Term Paper	5	
PR023144	压力容器安全设计 Design of Pressure Vessel Safety	1 周	1	考查 Term Paper	5	
PR023344	工程 CAD 制图实训 Training of Engineering CAD Drawing	2 周	2	考查 Term Paper	5	
PR023345	工业通风设计 Design of Industrial Ventilation	1 周	1	考查 Term Paper	6	
PR023146	职业卫生设计 Design of Occupational Health	1 周	1	考查 Term Paper	6	
PR023147	消防工程课程设计 Design of Fire Prevention	1 周	1	考查 Term Paper	6	

课程代码 Course Code	课程名称 Course Name	周数(学时) Week(hour)	学分 Credits	考核方式 Assessment	开课学期 Semester	备注 Notes
PR023346	安全工程生产实习 Safety Engineering Production Practice	5 周	5	考查 Term Paper	3 夏	
PR024148	建筑安全工程实习 Practice on Construction Safety	1 周	1	考查 Term Paper	7	
PR024347	危险化学品安全管理实习 Practice on Hazardous Chemicals Safety Management	1 周	1	考查 Term Paper	7	
PR023348	石油化工安全实习 Practice on Petrochemical Safety	1 周	1	考查 Term Paper	6	
PR023349	特种设备安全实习 Practice on Special Purpose Equipment Safety	1 周	1	考查 Term Paper	5	
PR024112	安全工程毕业设计(论文) Safety Engineering Graduation Design (Thesis)	12 周	6	考查 Term Paper	8	
总计 Total		37 周 +128 学时	37			

7、课外实践 (Extracurricular practice): 6 学分 (6 Credits)

包括主题教育活动、社会实践、志愿服务、勤工助学、学科竞赛、文体活动、创新创业活动、劳动实践等,其学分的认定按照教务处相关规定执行。

Extracurricular practice include Theme Education, Social Practice, Volunteer Service, Work-study Program, Discipline Competition, Cultural and Sports Activities, Innovative and Entrepreneurial Activities, Labor Practice and so on. The recognition of the credits for extracurricular practice shall be implemented according to the regulations of Academic Affairs Office.

八、毕业要求与培养目标矩阵（工程教育认证类专业）

毕业要求	培养目标				
	目标 1	目标 2	目标 3	目标 4	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		√	√		√
毕业要求 12	√			√	√

九、课程与毕业要求关系矩阵（工程教育认证类专业）

课程名称	(1) 工程知识	(2) 问题分析	(3) 设计/开发解决方案	(4) 研究	(5) 使用现代工具	(6) 工程与社会	(7) 环境和可持续发展	(8) 职业规范	(9) 个人和团队	(10) 沟通	(11) 项目管理	(12) 终身学习
思想道德与法治						L	L	H	M			M
中国近现代史纲要						L		M		L		
马克思主义基本原理								H	M			
毛泽东思想和中国特色社会主义理论体系概论							M	M				L
习近平新时代中国特色社会主义思想概论								M				H
形势与政策							L	M				
大学生职业生涯规划与就业指导												
大学生心理素质教育									M			M
军事理论												
大学英语				M	M					H		L
体育									H	M		
大学计算机	L				M							L
程序设计基础 A	L				M							M
高等数学 B	H											
线性代数	M											
概率论与数理统计	M											
大学物理	M											
大学化学	M											
分析化学	M			M			M					
工程图学	H	H	M									

课程名称	毕业要求	(1) 工程知识	(2) 问题分析	(3) 设计/开 发解决方 案	(4) 研究	(5) 使用现代 工具	(6) 工程与社 会	(7) 环境和可 持续发展	(8) 职业规范	(9) 个人和团 队	(10) 沟通	(11) 项目管理	(12) 终身学习
电工电子技术B		M	M										
工程力学		H	M										
工程热力学		H	M										
安全法律与法规		M	H						H				
可靠性理论		M	H										
安全监测与控制		M	M										
工程流体力学		H	H	L									
系统安全工程		H	H	M			M				M		
安全管理学			H	H	M		M					H	
安全行为学		M	H				M		M				
安全工程专业导论					M				L				
职业卫生工程学			H	H			L						
毒害控制与辐射安全			M	H	M			M					
安全人机工程		M	H	M									
电气与机械安全工程 学		M	M	M									
特种设备安全			H	M									
防火防爆工程学		M	H		M			L					
消防工程		M	H					L					
通风工程学		M	H		M								
矿山灾害防治			H		M		M	L					
建筑安全工程学		M	H		M								
危险化学品安全管理				H		M							
石油化工安全				H		M							

课程名称	毕业要求	(1) 工程知识	(2) 问题分析	(3) 设计/开 发解决方案	(4) 研究	(5) 使用现代 工具	(6) 工程与社 会	(7) 环境和可 持续发展	(8) 职业规范	(9) 个人和团 队	(10) 沟通	(11) 项目管理	(12) 终身学习
应急管理 with 救援			H		M	H	M						
安全管理学前言					M								H
智能安全工程			L	L		M	L						
事故调查与案例分析				L	M		L						
工程项目管理与法规							L					M	
安全经济学概论				L			M						
地质灾害防治 B			M		L	M	L	L					
军事理论及训练										M			M
思想政治社会实践									H				L
实验物理	L					L							
实验化学	M												
安全工程认识实习				H	M	L				M	M		M
矿山安全设计			M	H			L	L					
防火防爆课程设计				H	H	M							
安全评价实习			M			H				M	L		
压力容器安全设计				H	M					M			
工程 CAD 制图实训				H		H							L

课程名称	毕业要求	(1) 工程知识	(2) 问题分析	(3) 设计/开发 解决方案	(4) 研究	(5) 使用现代 工具	(6) 工程与社 会	(7) 环境和可 持续发展	(8) 职业规范	(9) 个人和团 队	(10) 沟通	(11) 项目管理	(12) 终身学习
工业通风设计				H	H		L						
职业卫生设计				M		H	M	M		M	L		
消防工程课程设计				H		M							
安全工程生产实习	M			H	H	M			M	H	H	M	M
建筑安全工程实习				H	M		M			L			
危险化学品安全管理 实习			H	H	M			M		M	M		
石油化工安全实习			H	H	M			M		M	M		
特种设备安全实习													
安全工程毕业设计 (论文)				H	H	M	H	M	M		M	H	M
社会实践							H	M		H	M		
科研训练					H							L	M
创业活动								M		H	M		M

注：H 表示课程对毕业要求指标支撑度高；M 表示课程对毕业要求指标支撑度中等；L 表示课程对毕业要求指标支撑度低。