博士专业课程简介 / Brief Introduction on Ph.D Majors

**电子信息与电气工程学部 / Faculty of Electronic Information & Electrical Engineering**

**电气工程 博士**

专业名称：电气工程

学习期限：3-4年

专业简介

本专业要求学生掌握电气工程领域坚实的基础理论、宽广的专门知识，掌握解决涉及工程问题的先进技术方法和现代技术手段，具有独立担负工程技术和工程管理的能力，成长为复合型高层次工程技术人才。具有独立承担解决电能生产、传输、分配、控制、检测、保护及其使用过程中的工程实际问题，解决电网运行、发电及潮流控制中的关键问题；从事智能电器的研制工作，从事各类电气新设备的开发、设计、研制，以及设备运行与维护更新的能力。

必修课：（专业核心课程）

中国文化概况（中文授课）、汉语言基础（中文授课的国际博士选课）、论文写作与学术规范（中文授课）、高等数值分析、应用泛函分析、应用泛函分析、非线性分析、高等电力网络分析、电气工程概论（全英文）

**Electrical Engineering**

Name of specialty: Electrical Engineering

Credit system: 3 -4 years

Brief Introduction

This major requires students to master the basic theory of electrical engineering and a wide range of professional knowledge.To master the advanced technology and modern technology for solving engineering problems. Students should have the ability to independently undertake engineering design and engineering management, and grow into a high level of engineering and technical talents. Besides, students should have the ability to solve power production,transmission, distribution, control, detection, protection and engineering practical problems, and to solve the key problems in the power grid operation, power generation and power flow control. Finally, students should have the abibily to undertake the design of smart apparatus, and various types of electrical equipment。

Main Course

Compulsory courses :

Overview of Chinese Culture (Chinese-taught), Basic Chinese(For Chinese-taught doctor program), Papers Writing and Academic Standards (Chinese-taught), Modern Computational Methods, Applied Functional Analysis, Nonlinear Analysis, Electric network analysis, Introduction to Electrical Engineering (English-taught)

**电子科学与技术 博士**

专业名称：电子科学与技术

学习期限：3-5年

专业简介

本学科专业培养能够从事电子科学技术方面的教学、科研、设计、管理或相关工程技术工作的高层次人才。

1. 极大规模集成电路设计、制造、封装与测试；

2..半导体集成传感器及集成系统；

3.传感器及传感器网络;

4.信息处理及其芯片设计;

5.专用集成电路设计;

必修课：（专业核心课程）

中国文化概况（英文授课）

汉语听说基础 （英文授课的国际硕士选课）

论文写作与学术规范（英文授课）

高等数值分析

高等信号处理

现代半导体技术

**[Electronics Science and Technology](http://www.baidu.com/link?url=2E4S69NfjOzzLK1E9U3he3N7LV_XPXBKuVZjR4eitUGiXx9y8Vg_pQK7X5kHWLUIgKXL2biZ-Jb4TrtEu30m3vPtG2D7cP5FUfP0QEd0IfQsAG0YJHWAxQ_oOkFt-lv4yZoGMx2tQxxIzhBjm082ya&wd=&eqid=8a429c4000004a810000000358eb59f9" \t "_blank)**

Name of specialty: [Electronics Science and Technology](http://www.baidu.com/link?url=2E4S69NfjOzzLK1E9U3he3N7LV_XPXBKuVZjR4eitUGiXx9y8Vg_pQK7X5kHWLUIgKXL2biZ-Jb4TrtEu30m3vPtG2D7cP5FUfP0QEd0IfQsAG0YJHWAxQ_oOkFt-lv4yZoGMx2tQxxIzhBjm082ya&wd=&eqid=8a429c4000004a810000000358eb59f9" \t "_blank)

Credit system: 3-5 years

Brief Introduction

The Ph.D program in [Electronics Science and Technology](http://www.baidu.com/link?url=2E4S69NfjOzzLK1E9U3he3N7LV_XPXBKuVZjR4eitUGiXx9y8Vg_pQK7X5kHWLUIgKXL2biZ-Jb4TrtEu30m3vPtG2D7cP5FUfP0QEd0IfQsAG0YJHWAxQ_oOkFt-lv4yZoGMx2tQxxIzhBjm082ya&wd=&eqid=8a429c4000004a810000000358eb59f9" \t "_blank) educates professional persons with the high level ability of teaching, researching and developing, managing in [Electronics Science and Technology](http://www.baidu.com/link?url=2E4S69NfjOzzLK1E9U3he3N7LV_XPXBKuVZjR4eitUGiXx9y8Vg_pQK7X5kHWLUIgKXL2biZ-Jb4TrtEu30m3vPtG2D7cP5FUfP0QEd0IfQsAG0YJHWAxQ_oOkFt-lv4yZoGMx2tQxxIzhBjm082ya&wd=&eqid=8a429c4000004a810000000358eb59f9" \t "_blank).

VLSI design, manufacture, package and test technology.

Semiconductor integrated sensor and system integration.

Sensor and Sensor‘s network.

Information processing and Integrated circuit design.

ASIC’s design.

Main Course

Compulsory courses :

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught master program) , Papers Writing and Academic Standards, Modern Computational Methods, Advanced Signal Processing, Modern Semiconductor Technology

**计算机科学与技术 博士**

专业名称：计算机科学与技术

学习期限：3-8年

专业简介：

计算机科学与技术专业创建于1974年，目前拥有计算机科学与技术一级学科博士点、博士后流动站，是大连理工大学“985”、“211”工程重点建设学科之一以及辽宁省一级重点学科。本学科自2009年至今，连续 7年进入ESI国际学科排名前1%。计算机学院由计算机软件与理论研究所、物联网技术研究所、理论计算机科学研究所、计算机系统结构研究所组成，现有中国科学院院士（兼职）1人，国家杰青基金获得者2人，国家“百千万人才工程”人才3人，教育部新世纪优秀人才3人，教授16人，副教授20人。承担了国家杰青基金、国家自然科学基金重点项目、国家863计划、国家科技重大专项、国家科技支撑计划等多个重大项目。

身处人工智能和互联网+的时代，紧密围绕第三次信息产业变革的机遇与挑战，面向前沿基础、国家战略和区域经济的重大需求，开展人才培养、科学研究和社会服务等工作。

主要研究方向：

(1)物联网与协同感知关键技术研究；(2) 软件定义网络和下一代网络架构；（3）自然语言处理、机器翻译、情感计算与社会媒体处理；（4）图论与复杂网络相关问题的算法设计与应用研究；（5）机器学习、深度学习和大数据挖掘分析。

必修课：（专业核心课程）

中国文化概况、汉语听说基础、论文写作与学术规范、矩阵与数值分析、数理统计、非线性分析、计算理论、高级计算机网络、网络仿真、Matlab 工程应用程序设计、中国经济概况

**Computer Science and Technology**

Name of specialty: Computer Science and Technology

Credit system: 3-8 years

Brief Introduction

The school of Computer science and technology was founded in 1974. At present, it has the first-class doctoral degree discipline and the post-doctoral research station. It is one of the key construction disciplines of Dalian university of technology "985" and "211" projects, and it is the Liaoning provincial key discipline. It is worth mentioning that this discipline has been in the top 1% of the international discipline ranking of Computer Science made by ESI (Essential Science Indicators) since 2009.

It consists of four institutes: the institute of computer software and theory, the institute of internet of things, the institute of theoretical computer science, and the institute of computer systems architecture. There is one member of the Chinese Academy of Sciences (Part-time), two winners of Outstanding youth fund , three Millions of Talent Projects National candidates, and three Winners of Education Ministry's New Century Excellent Talents Supporting Plan. There are 16 professors and 20 associate professors now.

They are undertaking many research projects, such as the National Outstanding Youth Fund, the key Project of National Natural Science Foundation, the National 863 High Tech program, Important National Science & Technology Specific Projects, National Science and Technology Support Program and other research projects.

In the era of Artificial intelligence highly developed and Internet highly popularized, the school of computer science and technology focuses on opportunities and challenges of third transformation of the information industry, serves the major demands for national strategy, regional economy and frontier issues and carry out talents cultivation, scientific research and social service work.

Main research direction:

(1) The key technologies of Internet of things and collaborative awareness;(2) Software defined network and next generation network architecture; (3) Natural language processing, Machine translation, Sentimental analysis and Social media processing; (4) Algorithm design and Application of complex network and nonlinear theory; (5) Machine learning, Deep learning and big data mining

Main Course

Compulsory courses :

Overview of Chinese Culture, Chinese Listening and Speaking, Papers Writing and Academic Standards, Matrix and Numerical Analysis, Mathematical Statistics, Nonlinear Analysis, Theory of Computation, Advanced Computer Network, Network Simulation, Matlab Programming, Overview of Chinese Economy (English-taught)

**控制理论与控制工程 博士**

专业名称：控制理论与控制工程

学习期限：3年

专业简介

本学科点由我国著名控制理论学者王众托院士为首的学术队伍创建于1956年，同年开始招收本科生，1986年开始培养硕士研究生，2000年开始培养博士研究生，2003年建立博士后流动站。“控制科学与工程”学科目前是一级学科博士点、博士后流动站、辽宁省重点学科。在全国第三轮学科评估中排名17。

本学科点具有很好的科研环境和高水平的实验平台，现拥有国家级、省部级、市级重点实验室8个。本学科现有教师51人，其中教授17人，博士生导师17人，副教授24人，具有博士学位教师43人。在高端人才方面，本学科有国家级有突出贡献的中青年专家、国家杰出青年基金获得者、教育部长江学者特聘教授和讲座教授、科技部中青年领军人才、国家“863”领域专家、优青基金获得者、千人计划及青年千人入选者等各类人才11人。

核心课程：

中国文化概况（英文授课）、汉语听说基础 （英文授课的国际硕士选课）、论文写作与学术规范、高等数值分析、应用泛函分析、非线性分析、最优化原理与方法、先进控制技术专题、模糊系统研究进展

**Control Science and Engineering**

Name of specialty: Control Science and Engineering

Credit system: 3 years

Brief Introduction

This discipline was established is in 1956 by an academic team led by the Academician Wang Zhongtuo, a famous scholar in the field of control theory, and began to recruit undergraduate since the same year. This discipline began to recruit master graduates in 1986 and PhD graduates in 2000. The postdoctoral research station was established in 2003. "Control Science and Engineering" is a first-level discipline doctoral program, postdoctoral research station and key discipline of Liaoning province, which ranked 17th in the third round national discipline evaluation.

This discipline has a good research environment and advanced experimental platform, and possesses 8 national, provincial and municipal key laboratories. Among the 51 staff members, there are 17 professors, 17 doctoral supervisors, 24 associate professors and 43 awarded with doctoral degrees. Among them, there are the national young and middle-aged experts with outstanding contributions, the winners of National Natural Science Funds for Distinguished Young Scholars, the Ministry of Education Yangtze River Scholars as distinguished professors and visiting professors, the MOST (Ministry of Science and Technology ) young and middle-aged leading talents, the national "863" field experts, the winners of National Natural Science Funds for Excellent Young Scholars, the National Thousand Talents Grogram Scholars, and so on.

Main Course:

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught doctor program) , Papers Writing and Academic Standards, Modern Computational Methods, Applied Functional Analysis, Nonlinear Analysis, Principles and Methods of Optimization, Topics on Advanced Process Control Technology, Advances in Fuzzy System Research

**生物医学工程 （博士）**

专业名称：生物医学工程

学习期限：5年

专业简介

本学科于2003年获得“生物医学工程”一级学科博士点和硕士点。2007年获得“生物医学工程”博士后流动站。2008年被评为辽宁省一级重点学科。2007年正式建立生物医学工程系，并开始招收本科生。

本学科现有全职师资45人，其中教授15人，副教授18人。近年来本学科通过“211工程”和“985工程”的建设，面向国际学术研究前沿和国家重大需求，已形成了一支研究方向明确、能从事基础研究、应用研究、开发研究的较高素质的教学科研队伍。生物医学工程学科属新兴的边缘交叉学科，研究方向广泛。我校“生物医学工程”是在信息与通信工程、材料学、机械电子工程、光电工程、生物化学工程和计算力学等学科交叉融合基础上形成的。主要研究方向包括：脑工程，医用材料与组织工程，重大疾病分子诊断，药物工程。

必修课：（专业核心课程）

高等数值分析、应用泛函分析、非线性分析、生物医学工程原理Ⅱ、药物研究进展、高等信号处理

**Biomedical Engineering**

Name of specialty: Biomedical Engineering

Credit system: 5 years

Brief Introduction

This discipline could confer “Biomedical Engineering (BME)” Master and Ph.D. degrees since 2013, while it could offer post-doctoral training in 2007. In 2008, it was rated as first-level key discipline in Liaoning province. In 2007, the Department of Biomedical Engineering was established and started to recruit undergraduate students.

There are 45 full-time faculties in the Department of Biomedical Engineering, including 15 professors and 18 associate professors. Recently through the establishment of “211 project” and “985 project”, and based on the frontiers of international academic research and national major demand, BME has been a teaching-research team with high quality, which has explicit research areas and can implement basic research, application research, and development research. BME is new and marginally interdisciplinary with comprehensive research areas. BME at Dalian University of Technology is an interdiscipline integrated based on information and communication engineering, materials science, mechanical and electronic engineering, optoelectronic engineering, biochemical engineering, computational mechanics, etc. The main research areas contain: medical information and instrument technology, brain engineering, medical materials and tissue engineering, molecular diagnosis of major diseases, pharmaceutical engineering.

Main Course

Compulsory courses :

Modern Computational Methods, Applied Functional Analysis, Nonlinear Analysis, Principles of Biomedical EngineeringⅡ, Drug Research Progress, Advanced Signal Processing

**信息与通信工程 博士**

专业名称：信息与通信工程

学习期限：5年

专业简介

本学科专业培养能够从事信息与通信工程领域的教学、科研、设计、管理或相关工程技术工作的高层次人才。学位获得者应具备坚实的基础理论和较宽广的专业知识；了解本学科理论研究和工程技术的前沿动态；具有理论研究及科学计算能力，能结合与本学科有关的实际问题从事工程研究。

必修课：（专业核心课程）

矩阵与数值分析、数理统计、优化方法、高等数值分析、应用泛函分析、数字图像处理、随机过程、面向对象编程技术、应用信息论基础、数字通信理论、数字信号处理、现代通信理论、高等信号处理

**Information and Communication Engineering**

Name of specialty: Information and Communication Engineering

Credit system: 3 years

Brief Introduction

The discipline aims to foster highly professional talented persons who can be engaged in the teaching, research, design, management or related engineering work in the field of information and communication engineering. Degree holders should have a solid basic theory and a wide range of professional knowledge; understand the theoretical research and frontier engineering technologies; has a certain theoretical research and scientific computing ability, can engage engineering research on practical engineering problems.

Main Course

Compulsory courses :

Matrix and Numerical Analyses, Mathematical Statistics, Optimization Method, Modern Computational Methods, Applied Functional Analysis, Digital Image Processing, Stochastic Process, Object-Oriented Programming Technology, Fundamentals of Applied Information Theory, Digital Communication Theory, Digital Signal Processing, Modern Communication Theory, Advanced Signal Processing

**管理与经济学部 / Faculty of Management & Economics**

**工商管理 博士**

专业名称：工商管理

学习期限：3－4年

专业简介

工商管理学科在国内起步较早,目前拥有博士后流动站，一级学科博士点和创新与创业、运营管理、环境管理、会计学、战略管理、营销管理、人力资源、投资管理、项目管理、旅游管理等多个学科方向，是国家“211工程”、“985工程”和辽宁省重点建设学科的支持学科。

学科具有跨世纪人才、教育部优秀青年等中青年教师队伍，学术队伍近70人。拥有省部级研究中心、省部级研究基地和省部级重点实验室。

必修课：（专业核心课程）

中国文化概况(英文授课）、汉语听说基础（英文授课的国际博士选课）、论文写作与学术规范（英文授课）、统计分析方法（英文授课）、管理经济学（英文授课）、工商管理数量模型研究方法（英文授课）

**Business Administration**

Name of specialty: Business Administration

Credit System: 3-4 years

Brief Introduction

The discipline of Ph.D. of Business Administration (BA) has an early start history in China and now it has been successfully evolved into and established the post-doctoral station and the national “Level-1” doctoral programs. There are multiple study major areas in Ph.D. of Business Management which are supported by the national “Project 211”” Project 985” and Liaoning key discipline construction program, including Innovation and entrepreneurship, Operations management, Environment management, Accounting, Strategy management, Marketing management, Human resource management, Investment management, Project management, and Tourism management.

The program consists of a distinguished teaching and research team encompassing around 70 faculty members. Some of which are the cross-century talents and the best young scholars who are selected and nominated by the Ministry of Education. The program also owns a numerous the ministerial and provincial research centers, modern research facilities and key research labs.

Main Course

Compulsory courses :

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught doctor program), Papers Writing and Academic Standards(English-taught), Introduction to Statistics(English-taught), Managerial Economics(English-taught), Quantitative Modeling Methods for Industry and Business(English-taught)

**管理科学与工程 博士**

专业名称：管理科学与工程

学习期限：3-4年

专业简介

专业介绍

管理科学与工程学科点是在1978年设立的系统工程学科点基础上，于1997年经批准名称调整为“管理科学与工程”，是国家首批博士授予专业的一级学科博士点，是我国管理领域首批国家6个重点学科之一，经过多年重点建设，目前已经形成了一支以王众托院士为首的高水平师资队伍，拥有教育部创新团队和国家创新群体，并且拥有国家地方联合工程研究中心等软硬件环境条件。

必修课：（专业核心课程）

中国文化概况、汉语听说基础、论文写作与学术规范、统计分析方法、系统工程、管理经济学

**Management science and engineering**

Name of specialty: Management science and engineering

Credit System: 3－4 years

Brief Introduction

Discipline of Management Science and Engineering was established based on the System Science founded in 1978. In 1997 it was renamed “Management science and engineering”. It is level-1 discipline which granted the doctoral degree earliest in China. It is also one of the first batches of the six key disciplines. After several years’ disciplinary construction, now we have a high quality research and teaching team headed by the academician WANG Zhongtuo, innovation team of Ministry of Education and national innovation group, national local joint Engineering Research Center and other excellent research facilities in software and hardware.

Main Course

Compulsory courses :

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught doctor program), Papers Writing and Academic Standards(English-taught), Introduction to Statistics(English-taught), Systems Engineering(English-taught), Managerial Economics(English-taught)

**化工与环境生命学部 / Faculty of Chemical, Environmental & Biological Science & Technology**

**化学（英文授课）博士**

专业名称：化学

学习期限：3-4年

专业简介

大连理工大学化学学科为省重点学科，拥有化学一级学科博士点，涵盖无机化学、分析化学、有机化学、物理化学和高分子化学与物理、化学生物学六个二级学科，并建有化学博士后科研流动站。化学学科师资力量雄厚，承担了众多国家基金项目，研究领域涵盖了现代化学的各主要领域，并注重与化工、环境、生命等学科的交叉，彰显工科化学的研究特色。

必修课：

非线性分析、矩阵与数值分析、数理方程、数理统计、复变函数与积分变换、计算化学导论（双语）、过程工程（双语）、物理有机化学（双语）、生物化学 A II（双语）、化学品安全与法规(双语)、有机合成策略（双语）、分子工程（双语）

选修课：

有机结构分析 II（双语）、绿色化学与化工（全英文）、计算化学导论（双语）、生物有机化学（双语）、超分子化学与传感（双语）、金属酶与生物模拟（双语）、污染控制化学（双语）、界面化学与应用（双语）

**Doctor of Chemistry in English**

Name of specialty: Chemistry

Credit system: 3 years

Brief Introduction

The chemistry program at DUT is a provincially key discipline. While it has PhD programs in six secondary [discipline](http://www.baidu.com/link?url=DRVmXLwnTBttDAQZQsqAMGVswFfHLloXX1ptFeFvAgxdfoc6vH0AJwCcmvgiAX5gna8AMRh4dt-0eunfLSklm1G7HXjfZ3iGhsTfe9gusCi0Tvs5bSsA43Go4bEMp8qF" \t "_blank)s, i.e., inorganic chemistry, analytical chemistry, organic chemistry, physical chemistry, polymer chemistry and physics, and chemical biology, it also has a chemical research station for postdoctoral researchers. The internationally leading faculty and staffs have been in charge of many nationally-funded projects. Their research interests cover core fields of modern chemistry and emphasize the interdisciplinary research programs involving these fields and chemical engineering, environmental science and engineering, and life science, highlighting the characteristics of engineering chemistry.

Main Course

Compulsory courses :

Nonlinear Analysis, Matrix and Numerical Analysis, Equations of Mathematical Physics, Mathematical Statistics, Complex Function and Integral Transformation, Introduction to Computational Chemistry, Process Engineering, Physical Organic Chemistry, Biochemistry A II, Chemical Safety and Regulations, Organic Synthesis Strategy, Molecular Engineering

Selective courses:

Organic Structure Analysis II, Green Chemistry and Technology, Introduction to Computational Chemistry, Bioorganic Chemistry, Supramolecular Chemistry and Molecular Sensing, Metalloenzymes and Biomimetic Models, Chemistry on Pollution Control, Interface Chemistry and Applications, Laser Photochemistry

**药物工程 博士**

专业名称：药物工程

学习期限：3-4年

专业简介

药物工程博士学位点于2003年批准设立，研究方向涉及药物合成化学、天然药物化学、药物分子设计、药物输送系统、生物制药和药理毒理学等。研究内容包括小分子药物先导化合物的设计、合成及天然活性成分的发现；探索药物合成的反应机理、药物评价新方法及药物分子作用机制。本学科师资力量雄厚，现有双聘院士1人，教师队伍具有广阔的国际视野。近五年来参与和完成与学科相关的国家和省部级科研项目20余项，多项国家重大新药创制专项、国家支撑计划、国际合作和校企联合研究项目，申请国际和国家发明专利30余项。本学科重点培养学生掌握新药研发的基本原理和方法，包括天然活性化合物的发现、药物分子设计、药物合成、药理和毒理学评价、药物输送和质量控制等。毕业生具备新药研发的知识和技能，能在教学、科研及药物生产企业从事药品研发、生产、管理等工作。

必修课：（专业核心课程）

化工与化学进展、 药物研究进展

**Pharmaceutical Engineering**

Name of specialty: Pharmaceutical Engineering

Credit system: 3-4 years

Brief Introduction

In 2003, Dalian University of Technology has received the first level master’s degree in pharmaceutical engineering discipline. This field includes drug synthesis chemistry, natural medicinal chemistry, drug design, drug delivery systems, biopharmaceuticals and pharma-toxicology. The research focuses on the design and synthesis of small-molecule lead compounds, discovery of natural active ingredients, and development of drug-related new theories, new technologies, and new reactions. Furthermore, this research also encompasses both the reaction mechanism elucidation and a quest for new active targets. Our faculties are well qualified, trained and dedicated and also have a broad international perspective. One of them is an academician of both Chinese Academy of Sciences and Chinese Academy of Engineering. During the last five years, more than 20 drug-related research projects have been conducted and completed by our faculties. These projects are national major new research projects, national supported programs, and international cooperation and university-enterprise joint research projects. It is also worth mentioning that more than 30 international and national invention patents have also been applied. We focus on students’ training about the basic principles and methods for drug R&D, including the discovery of natural active compounds, drug design, drug synthesis, pharmacological and toxicological evaluation, drug delivery and quality control. Our graduates are expected to have basic knowledge and skills for the R&D of new drugs and are capable of teaching and conducting research as well. The graduates would be skillful candidates for rendering their services in pharmaceutical companies and also can engage in drug-related R&D, production, and management.

Main Course

Compulsory courses :

Progress in chemical engineering and [chemistry](javascript:void(0);), Progress in Drug Discovery

**机械工程学院 / School of Mechanical Engineering**

**机械工程（英文授课）博士**

专业名称：机械工程

学习期限：非定向委培博士研究生的基本学制为3-4年；直接攻博研究生的基本学制为5年（含学习课程1年）；硕博连读（含提前攻博）研究生的基本学制为5-6年（含硕士阶段2年）

专业简介

经过多年的发展，本学科形成了一支由两院院士领衔的高层次领军人才团队，建立起知识结构新、学术思想活跃的中青年学术梯队。拥有1个国家创新群体、1个科技部重点发展团队、1个教育部创新团队和1个国家级教学团队。拥有“辽宁重大装备制造”国家级协同创新中心、教育部首批重点建设的工程训练中心（教育部国家级实验教学示范中心学科组组长单位）、精密/特种加工教育部重点实验室和教育部国防重点实验室、微纳米技术及系统辽宁省重点实验室、模塑制品教育部工程研究中心、辽宁省起重机械工程技术研究中心、车辆先进设计制造研究中心等国家级、省部级教学科研基地。

必修课：（专业核心课程）

中国文化概况（英文授课）、汉语听说基础 （英文授课的国际博士选课）、论文写作与学术规范（英文授课）、矩阵与数值分析、数理统计、数理方程、统计分析方法、特种加工与微细加工

**Mechanical Engineering**

Name of specialty: Mechanical Engineering

Credit system: The basic schooling period for non directional and sponsored PH.D students is 3-4 years. The basic schooling period for directional or sponsored PH.D students is 3-5 years. The basic schooling period for direct doctoral graduates is 5 years (including 1 year learning courses). For Master-Doctor combined program graduates, the basic schooling period is 5-6 years (including 2 years master's stage).

Brief Introduction

After years of effort, this subject has become a leading academic team leaded by two academicians of Chinese Academy of Science and Chinese Academy of Engineering and formed a young and mid-career academic echelon with new knowledge structure and active academic thinking. There are one national innovation group, one key group awarded by the Ministry of Science and Technology, one innovation group awarded by the Ministry of Education (MOE) and one national teaching group, the National Collaborative Innovation Center of Major Machine Manufacturing in Liaoning, the engineering training center which is one of the first group of key construction of Ministry of Education, the Key Laboratory for Precision and Non-traditional Machining of Ministry of Education, the National Defence Key Laboratory of the Ministry of Education, and Liaoning Provincial Key Laboratory for Micro/Nano Technology and System, and Engineering Research Center for Mould & Plastics of Ministry of Education, Engineering Research Center for Hoisting Machinery of Liaoning Province and Research Center of Advanced Design and Manufacturing of Vehicle.

Main Course

Compulsory courses :

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught doctor program), Papers Writing and Academic Standards, Matrix and Numerical Analysis, Mathematical Statistics, Equations of Mathematical Physics, Introduction to Statistics, Non-traditional Machining and Micro-machining

**仪器科学与技术（英文授课）博士**

专业名称：仪器科学与技术

学习期限：非定向委培博士研究生的基本学制为3-4年；在职博士研究生（定向、委培）的基本学制为3-5年；直接攻博研究生的基本学制为5年（含学习课程1年）；硕博连读（含提前攻博）研究生的基本学制为5-6年（含硕士阶段2年），论文工作时间不少于三年

专业简介

本学科于2005年获一级学科博士授权点，2007年批准设立博士后科研流动站，同年被评为辽宁省一级重点学科，设有“精密仪器及机械”和“测试计量技术及仪器”两个二级学科。

经过多年的发展，本学科建立一支由中国科学院院士领衔的师资队伍。设有1个教育部重点实验室、1个教育部国防重点实验室、1个辽宁省重点实验室、1个省部级工程研究中心。近五年，完成和承担各类科研项目80余项。获国家技术发明奖1项、省部级奖8项；授权国家发明专利58项；发表学术论文400余篇，其中SCI收录108篇。

必修课：

中国文化概况（英文授课）、汉语听说基础 （英文授课的国际博士选课）、论文写作与学术规范（英文授课）、矩阵与数值分析、数理统计、数理方程、统计分析方法、精密机械误差分析与控制

**Instrument Science and Technology**

Name of specialty: Instrument Science and Technology

Credit system: The basic schooling period for non directional and sponsored PH.D students is 3-4 years. The basic schooling period for directional or sponsored PH.D students is 3-5 years. The basic schooling period for direct doctoral graduates is 5 years (including 1 year learning courses). For Master-Doctor combined program graduates, the basic schooling period is 5-6 years (including 2 years master's stage).

Brief Introduction

This subject was granted as approved as doctoral degree program in first-class discipline in 2005 and to set up the Post-Doctoral Research Stations in 2007 and became the first-class key discipline of Liaoning Province. This subject has “Precision Instrument and Machinery” and “Measurement Technology & Instruments” two secondary-class disciplines. After years of effort, this subject has a high-level teaching staff leaded by one academician of Chinese Academy of Science. This subject has one key laboratory of the Ministry of Education, one National Defence Key Laboratory of the Ministry of Education, one Liaoning Provincial key laboratory and one engineering research center of Liaoning province. Over the 5 years, 80 research projects have been completed and undertaken. One state technological invention award and 8 provincial or ministerial science & technology awards and 58 national patents were obtained. 400 academic papers were published, 108 of which are indexed by SCI.

Main Course

Compulsory courses :

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught doctor program) , Papers Writing and Academic Standards, Matrix and Numerical Analysis, Mathematical Statistics, Equations of Mathematical Physics, Introduction to Statistics, Precision Mechanical Error Analysis and Control

**材料科学与工程学院 / School of Materials Science & Engineering**

**材料科学与工程 博士**

专业名称：材料科学与工程

学习期限：3-4年

专业简介

本学科点创建于1958年，全国第一批获准设立的硕士点，并分别于1984年和1993年被批准为博士点。1992年材料科学与工程获准设立博士后科研流动站，2001年获批材料科学与工程一级学科博士点。设有材料加工工程、材料学、材料物理与化学3个二级学科博士点，自主设置材料表面工程、材料连接技术和高分子材料3个二级学科博士点及材料无损检测与评价1个二级学科硕士点。2008年材料科学与工程成为辽宁省一级重点学科。

拥有1个教育部科研创新团队，1个教育部重点实验室，3个辽宁省重点实验室、1个辽宁省高校重点实验室及2个辽宁省技术研究中心。下设大连理工大学材料测试分析中心，现有高分辨透射电镜、扫描电镜、电子探针、DSC差热分析仪、X射线衍射仪、荧光X射线光谱仪、超导强磁场等高端检测分析设备。2006年获批为“辽宁省高等学校重点学科领域研究生培养基地”。

本学科形成了等离子体与载能束材料改性、绿色连接技术与装备、有色合金电磁铸造、太阳能光伏材料、材料设计及应用、材料加工过程计算机应用等重点研究方向。近五年获得发明专利89项，成果转化40项，科研成果获得国家技术发明二等奖2项，省部级奖一、二等奖16项，省部级鉴定成果16项。“高导电铝合金材料”被列为“西气东输”和“三峡工程”指定产品。“材料电磁加工技术”成果鉴定为国内首创，达到国际领先水平，参与研制的新型高导高强接触线已应用于京-沪高铁。“低铬奥氏体不锈钢焊接材料”产品列入国家行业标准，并在国内石化企业推广应用。激光－氩弧镁合金焊接技术在国内建立多家产业化基地。开发的冶金法多晶硅制备技术，被国内多家企业应用，冶金法多晶硅产品被列为国家新材料产业“十二五”重点产品，并拥有太阳能光伏系统示范基地。作为首席单位承担的973项目“核主泵的制造关键科学问题”为核电产品制造提供关键技术。

必修课：

中国文化概况（英文授课）、汉语听说基础 （英文授课的国际博士选课）、论文写作与学术规范（英文授课）、非线性分析、矩阵与数值分析、数理统计、数理方程、统计分析方法、复变函数与积分变换、材料微结构分析方法、材料强度学、材料成形理论、计算材料学、纳米材料学、材料工程计算机应用、电子显微学实验

**PHD of Materials Science and Engineering**

Name of specialty: Materials Science and Engineering

Credit system: 3-4 years

Brief Introduction

This discipline was established in 1958. It was one of the first batch of master degree sections in China, and was approved of granting doctoral degree in 1984. The discipline of materials science and engineering was approved of establishing post-doctoral research station in 1992 and doctoral degree site of the first level discipline of materials science and engineering in 2001. It owns three doctoral degree sites with second level discipline, including material processing engineering, materials science, material physics and chemistry, and four independently set up doctoral degree sites with second level discipline, including material surface engineering, material joining technology, polymer materials, and nondestructive testing and evaluation of materials. The discipline of materials science and engineering became the first level key discipline of Liaoning province in 2008.

The discipline site owns one research innovation team of the ministry of education, one key laboratory of the ministry of education, three key laboratories of Liaoning province, one key laboratory of colleges and universities in Liaoning province, and two technology research center of Liaoning province. Materials Test and Analysis Center of Dalian University of Technology has high-ranking analysis equipments, including high resolution transmission electron microscope, scanning electron microscope, electron probe microanalyzer, differential thermal analyzer, X-ray diffractometer, fluorescence X-ray spectrometer, and superconducting high magnetic field. In 2006, the center was granted “Postgraduate Cultivating Base of the Key Discipline Area in Liaoning Province”.

Several key research directions have been established in this discipline, including Materials Modification by Plasma and Energetic Beams, Green Joining Technology and Equipments, Electromagnetic Casting of Non-Ferrous Alloys, Solar Energy Photovoltaic Materials, Materials Design and Application, and Computer Application for Material Processing. In recent five years, the discipline has obtained 89 invention patents, 40 achievement transformations, 2 second prizes of national technological invention, 16 first or second prizes of provincial and ministerial level, and 16 appraised achievements. “High Conductive Aluminum Alloy Material” was listed as designated products for “West-East Pipeline Project” and “Three Gorges Project”. “Material Electromagnetic Processing Technology” with international leading level was appraised as national initiative. This technology has been involved in developing a new type of high conductive, high strength contact line, which has been applied in the high-speed rail from Beijing to Shanghai. The product of “Low Chromium Austenitic Stainless Steel Welding Material” was identified as national industry standard, and widely applied in domestic petrochemical enterprises. A number of industrialization bases in domestic have been established using Laser-argon arc welding technology of Magnesium alloys. Polycrystalline silicon prepared from the metallurgical technology has been applied in a number of domestic enterprises. The poly-Si was listed as key product of national new material industrial during the 12th 5-years-plan. Meanwhile, it has established a demonstration base of solar energy photovoltaic system. As chief executive unit, the discipline site is undertaking a 973 project of “Key scientific problems of nuclear main pump manufacture”.

Main Courses

Compulsory courses :

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught doctor program) , Papers Writing and Academic Standards, Nonlinear Analysis, Matrix and Numerical Analysis, Mathematical Statistics, Equations of Mathematical Physics, Introduction to Statistics, Complex Function and Integral Transformation, Materials Microstructure Analysis, Principles of Materials Strength, Essentials of Materials Processing, Computational Materials Science, Nanomaterials, Computer Applications on Materials Processing Engineering, Practical Electron Microscopy

**建设工程学部 / Faculty of Infrastructure Engineering**

**土木工程（英文授课）博士**

专业名称：土木工程

学习期限：3-4年

专业简介

大连理工大学土木工程专业在国内外的科研界和教育界享有较高声誉，在全国的土木工程专业排名中名列第8。近年来，本专业的科研人员每年获得4000多万的科研经费。该专业主要有以下八个研究方向：岩土工程，结构工程，防灾减灾工程及防护工程，桥梁与隧道工程，市政工程，供热、供燃气、通风及空调工程，建筑材料、工程管理。

研究方向

岩土工程、结构工程、防灾减灾工程及防护工程、桥梁与隧道工程、市政工程、供热、供燃气、通风及空调工程、建筑材料、工程管理

主要课程

必修课：

矩阵与数值分析、数理统计、数理方程、非线性分析

选修课：

结构动力学、土动力学、随机振动、高等流体力学、高等工程热力学、高等传热学、现代控制工程、数据结构与算法、有限元方法与应用、建筑功能材料、近代抗震技术、现代混凝土与纤维复合材料

**Ph.D. of Civil Engineering in English**

Name of specialty: Civil Engineering

Credit system: 3-4 years

Brief Introduction

Civil Engineering in Dalian University of Technology (DUT) enjoys a high reputation both at home and abroad for its excellent performance in both research and education; it is the 8th ranking of civil engineering in China. In recent years, more than 40 million CNY worth of research grants each year has been won by the academic staff of civil engineering. The DUT civil engineering focuses its research effort mainly on eight fields, geotechnical engineering, structural engineering, disaster prevention mitigation and protection engineering, bridge and tunnel engineering, municipal engineering, heating, gas supply, ventilating and air conditioning engineering, construction materials, and engineering management.

Research directions:

Geotechnical engineering, Structural engineering, Disaster prevention mitigation and protection engineering, Bridge and tunnel engineering, Municipal engineering, Heating, gas supply, ventilating and air conditioning engineering, Construction materials, Engineering management

Main Course

Compulsory courses :

Matrix and Numerical Analysis, Mathematical Statistics, Equations of Mathematical Physics, Nonlinear Analysis

Selective courses:

Structural Dynamics, Soil Dynamics, Random Vibration, Advanced Fluid Mechanics, Advanced Engineering Thermodynamics, Advanced Heat Transfer, Modern Control Engineering, Data Structures and Algorithms, Finite Element Method and Its Application, Functional Materials of Construction, Advanced Aseismic Technique, Modern Concrete and Fiber Composite Materials

**水利工程（英文授课）博士**

专业名称：水利工程

学习期限：3-4年，最长8年

专业简介

大连理工大学水利工程专业是国家一级重点学科，目前已发展成为具有广泛影响力的国际知名学科。水利工程一级学科下包含五个二级学科，即港口、海岸及近海工程，水工结构工程，水文学及水资源，水力学及河流动力学和水利水电工程。经过半个多世纪的发展，本学科形成了海洋环境动力学、水工和核电结构抗震、水利水电资源高效利用等特色研究团队，取得了多项达到国际顶尖水平的研究成果，在工程实践中取得显著的经济与社会效益。

研究方向

水文学及水资源、水力学及河流动力、水工结构工程、水利水电工程、港口、海岸与近海工程

主要课程

必修课：

中国文化概况（英文授课）、汉语听说基础（英文授课的国际博士选课）、论文写作与学术规范（硕士已修博士免修）、矩阵与数值分析、数理统计、连续介质力学、非线性分析

选修课：

结构动力学、土动力学、随机振动、高等流体力学、高等工程热力学、高等传热学、现代控制工程、数据结构与算法、有限元方法与应用、建筑功能材料、近代抗震技术、中国经济概况（英文授课）

**Ph.D. of Hydraulic Engineering in English**

Name of specialty: Hydraulic Engineering

Credit system: 3-4 years, and the longest period is 8 years.

Brief Introduction

Hydraulic Engineering in Dalian University of Technology (DUT) enjoys a high prestige both nationally and internationally for its excellent performance in both research and education. It comprises 5 secondary disciplines, namely Harbor, Coastal and Offshore Engineering, Hydraulic Structure Engineering, Hydrology and Water Resources, Hydraulics and River Dynamics and Hydraulic and Hydropower Engineering. After more than 50 years of effort, Hydraulic Engineering has established its unique and distinct strengths in Marine environmental dynamics, Seismic fortification of hydraulic and nuclear power structures, and Efficient utilization of water and hydropower resources, and has gain a series of internationally leading achievements in scientific research. And substantial economic and social benefits have been achieved in the engineering practice, making notable contributions to the world.

Research directions:

Hydrology and Water Resources

Hydraulics and Fluvial Dynamics

Engineering hydraulics

Hydraulic Structure Engineering

Water Resources and Hydraulic Engineering

Harbor, Coastal and Offshore Engineering

Main Course

Compulsory courses:

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught master program), Papers Writing and Academic Standards, Matrix and Numerical Analysis, Mathematical Statistics, Continuum Mechanics, Nonlinear Analysis

Selective courses:

Structural Dynamics, Soil Dynamics, Random Vibration, Advanced Fluid Mechanics, Advanced Engineering Thermodynamics, Advanced Heat Transfer, Modern Control Engineering, Data Structures and Algorithms, Finite Element Method and Its Application, Functional Materials of Construction, Advanced Aseismic Technique, Overview of Chinese Economy (English-taught)

**建筑与艺术学院 / School of Architecture & Fine Arts**

**建筑学 博士**

专业名称：建筑学

学习期限：3-5年

专业简介

建筑学专业成立于1983年，1987年获得建筑设计及其理论硕士点，2001年开始在土木工程博士点招收建筑设计及其理论方向博士研究生，2005年获批建筑设计及其理论二级学科博士点，为全国13所拥有建筑学博士点的院校之一,2008年建筑学博士点获批辽宁省重点学科。2010年获批建筑学一级学科博士点。 2012年获批建筑学一级学科博士后科研流动站，在全国第三次学科评估中获得建筑学第9的成绩，已形成理论研究（环境行为理论及建筑文化遗产保护）、设计实践（建筑创作与城市设计）、建筑技术（可持续建筑技术与设计）三个特色研究领域。

必修课：（专业核心课程）

建筑设计理论、城市设计历史与理论、环境行为研究动态、生态建筑理论

**Architecture**

Name of specialty: Architecture

Credit system: 3-5 years

Brief Introduction

The Department of Architecture was founded in 1983, and in 1987 the Department firstly had its master's degree program in Architecture Design and Theory. In 2001, the Department began to recruit PhD candidates in the field of Architecture Design and Theory direction from the doctoral programs within the Department of Civil Engineering. In 2005, the second-class doctor station of Architectural Design and Theory was approved, becoming one of the 13 doctor stations with Architecture Program in China. In 2008, the doctor station of Architecture was rewarded as Liaoning provincial key discipline. In 2010 the first-class doctor station of Architectural Design and Theory was approved. In 2012, the station for Post-Doctoral Research was established within the Department, and in the same year, the program of Architecture was rated 9th in China in the third National Academic Assessment of Architecture. Now, the Department has three research programs in the specialties of Theory Studies (the theory of environmental behavior and architectural heritage protection), Design Practices (architectural creation and urban design), and Building Technology (sustainable technology and design of sustainable buildings).

Main Course

Compulsory courses :

Architecture Design Theory, History and Theory of Urban Design, Development and Tendency of Environment-Behavior Research, Theory of Eco-Building

**城乡规划 博士**

专业名称：城乡规划

学习期限：3-5年

专业简介

本学科于2001年获准设立城市规划与设计硕士点；2005年在建筑设计及其理论二级博士学位授权点的基础上开设城市规划与设计研究方向；于2011年获准设立城乡规划学一级学科博士点，构建了从本科、硕士到博士的完整培养体系。在新型城镇化视野下，结合国际学科前沿，本学科结合本校学科传承特点，所在地域特征、学科交叉优势，结合多规合一等的空间规划制度重构，发挥师资优势、学院平台优势，形成“城市物质环境与空间形态规划”的学科特色。

必修课（专业核心课程）

城市设计历史与理论、环境行为研究动态、科研选题与学术规范、城市战略规划理论、交通规划理论与实践、生态建筑理论

**Urban and Rural Planning**

Name of specialty: Urban and Rural Planning

Credit system: 3-5 years

Brief Introduction

Our school obtained the permit to provide the graduate program of urban planning and design in 2001. In 2005, the urban planning and design doctoral program was established, which was classified under the second-level discipline for doctoral degree of architectural design and theory. In 2011, our school obtained the permit to offer the first-level discipline for doctoral degree of urban and rural planning. A complete curricular system covering undergraduate, graduate and doctoral programs has been established since then. In the background of New Urbanization Plan and Multiple Planning Integration, combining with international research frontier, school educational traditions, interdisciplinary advantages, and local characteristics, our programs exploit the advantages of faculty resource and school platform, and have formed the disciplinary characteristics of “urban physical environment and spatial form planning”.

Main Course

Compulsory courses :

History and Theory of Urban Design, Development and Tendency of Environment-Behavior Research, Research Proposals and Ethics, Urban Strategic Planning Theory, Theory and Practice of Transportation Planning, Theory of Eco-Building

**运载工程与力学学部 / Faculty of Vehicle Engineering & Mechanics**

**工程力学 博士**

专业名称：工程力学

学习期限：3-5年

专业简介

工程力学系于1957年由钱令希院士和唐立民教授领导创建，1981年首批获得博士学位授予权，1985年设立力学博士后科研流动站。1987年计算力学被确定为国家重点学科。1996年首批获得力学一级学科博士学位授予权。2001年工程力学被确定为国家重点学科，2007年被确定为力学一级学科国家重点学科。目前本学科包含一般力学和力学基础、固体力学、流体力学、工程力学、计算力学、岩土与环境力学、动力学与控制、应用实验力学、生物与纳米力学、航空航天力学与工程、生物医学工程、制造工艺力学，共12个二级学科，拥有上述12个二级学科的博士学位和硕士学位授予权。

工程力学系拥有一支高水平的科研教学队伍，有教授41人，其中中科院院士3位，6名长江学者特聘教授（含2名讲座教授），4名国家杰出青年科学基金和海外青年学者合作研究基金获得者。2004年获得国家自然科学基金创新研究群体。

工程力学系在国内外都具有很高的学生声誉，在许多领域的研究工作都处于国内前沿位置。目前每年约有170名研究生进入我系攻读硕士或博士学位。

必修课：（专业核心课程）

中国文化概况（英文授课）、汉语听说基础 （英文授课的国际硕士选课）、论文写作与学术规范（英文授课）、高等数值分析、应用泛函分析、非线性分析、连续介质力学

**Engineering Mechanics**

Name of specialty: Engineering Mechanics

Credit system: 3-5 years

Brief Introduction

Department of Engineering Mechanics was founded by Prof. Lingxi Qian, the academician of Chinese Academy of Science, and Prof. Limin Tang, at Dalian University of Technology (DUT) in 1957. In 1981, it was firstly authorized to offer doctoral degree. In 1985, a postdoctoral research station on mechanics was found. In 1987, the discipline of Computational Mechanics was authorized as a National Key Discipline. In 1996, the discipline of Mechanics, as a first-level discipline, was authorized to confer the doctoral degree. In 2001, the discipline of Engineering Mechanics was authorized as the National Key Discipline. In 2007, Mechanics was authorized as the first level National Key Discipline. Now, there are 12 sub-disciplines under this first-level National Key Discipline, including General Mechanics and Mechanics Fundamentals, Solid Mechanics, Fluid Mechanics, Engineering Mechanics, Applied and Experimental Mechanics, Computational Mechanics, Geotechnical and Environmental Mechanics, Dynamics and Control, Applied and Experimental Mechanics, Biomechanics and Nanomechanics, Aerospace Engineering Mechanics, Manufacture Processing Mechanics, Biomedical Engineering.

The high-level academic staff consists of 41 professors, of whom 3 are academicians of Chinese Academy of Science, 6 are Chair Professors of “Cheung Kong Scholars Programme”, 4 gained the National Science Fund for Distinguished Young Scholars and the Joint Research Fund for Overseas Natural Science of China. The department was the first to be awarded the University Science Fund for Innovative Research Group of National Natural Science Foundation in 2004.

The research in mechanics at Dalian University of Technology is highly recognized. It is locating the leading edge in the nation and has international reputation. Each year there are about 170 postgraduates joining the department for master degree and doctoral degree.

Main Course

Compulsory courses :

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught master program) , Papers Writing and Academic Standards, Modern Computational Methods, Applied Functional Analysis, Nonlinear Analysis, Continuum Mechanics

**车辆工程 博士**

专业名称：车辆工程

学习期限：4-5年

专业简介

大连理工大学汽车工程学院成立于2007年5月，是辽宁省第一所汽车工程学院。根据目前国内外汽车领域的市场需求以及未来国际汽车工业的发展趋势，该院现设有：车辆工程、汽车车身工程、汽车电子工程、汽车材料工程、汽车工业装备及自动化、汽车服务工程以及智能车辆等七个科研和产业化研究方向。现学院共有6个研究所、4个实验室、1个实验中心以及1个培训中心。

汽车学院在编教师总人数为41人，其中教学科研岗位36人，专职实验岗位5人；正高级职称10人，副高级职称17人，中级职称14人；博士生导师10人。在整个师资队伍中，有教育部千人计划学者1人、国家杰出青年科学基金获得者1人；中国汽车工程学会车身专业委员会委员2人；中国汽车工业优秀青年科技人才2人。辽宁省百千万人才工程计划之千人层次2人。

汽车学院具有车辆工程专业硕士学位和博士学位的授予权，目前每年约有130名研究生进入我院攻读硕士或博士学位。

必修课：（专业核心课程）

高等数值分析、应用泛函分析、非线性分析、汽车现代造型与设计

**Automotive Engineering (Doctor)**

Name of specialty：Automotive Engineering

Credit term: 4-5 years

Brief Introduction

The School of Automotive Engineering (SAE) in Dalian University of Technology, was established in May 2007. It is the first automotive engineering school in Liaoning Province. Focusing on the current domestic and international automotive market demand and the future development trends of the world auto industry, SAE has the following research fields: automotive engineering, automotive body engineering, automotive electronics engineering, automotive materials engineering, automotive industry equipment and automation, automotive service engineering and intelligent vehicles. At present, SAE has 6 research institutes, 4 laboratories, 1 laboratory and 1 training center.

SAE has 41 total staffs including 36 teaching and research positions and 5 laboratory technicians. The faculty consists of 10 professors, 17 assistant professors and other 14 teachers with intermediate title. Among the whole faculty exist 10 Ph.D. supervisors, 1 thousand talents program scholar provided by Ministry of Education, and 1 national outstanding young science fund winner, 2 China Automotive Engineering Society auto body professional committee, 2 China's auto industry outstanding young scientific and technological personnel, and 2 people in one thousand people level of Liaoning province talents project plan.

Students could be granted master's and doctor's degree here, also a post-doctoral mobile station is available. At present, there are about 130 graduate students admitted here for master's or doctoral degree each year.

Compulsory Courses (major core courses)

Modern Computational Methods, Applied Functional Analysis, Nonlinear Analysis, Advanced Design Methods for Vehicle Styling

**软件学院 / School of Software**

**软件工程 博士**

专业名称：软件工程

学习期限：3年

专业简介

大连理工大学软件工程一级学科坚持“新思想、新领域、新方法”的发展思路。秉承“软件+X”的基本理念，制定了“软件+海洋”的特色方向，形成了以“软件工程理论与技术”、“数据科学与机器智能”、“泛在网络与可信技术”3个二级学科为依托，重点建设“海洋信息处理与计算”二级学科的“3+1”特色发展模式。

本学科拥有专职教师108人，其中正高级16人，副高级38人，博士生导师16人，国家杰出青年基金获得者1人（尹宝才），教育部新世纪优秀人才5人，海外学术大师1人，海天学者13人，兼职教授6人（含中国工程院院士、国家基金委副主任、学院名誉院长高文教授），2014年“中国高被引学者”1人，2015年“中国高被引学者”1人，国家香江学者计划1人，星海优青2人，企业兼职教师90余人，50%以上的教师具有海外学术背景。拥有一支以高端人才为引领、中青年教师为骨干、专兼职相结合的高水平师资队伍。

近5年来，本学科教师累计发表论文540余篇，其中含SCI检索200余篇，在计算机学会认定的A类、B类期刊及A类会议上发表高水平文章50余篇。学院2015年科研经费进款额达到1110万元。累计承担各类国家自然科学基金60余项，其中主持和参与重点项目3项、重大研究计划培育项目1项。主持国防项目3项，参与973课题1项、863课题3项。获得省部级项目25项、大连市各级科技资助项目20余项。获得国家发明专利20余项、软件著作权70余项。近3年获批辽宁省精品资源共享课和教育部-IBM精品课程共5项、软件学院联盟慕课共享共建课程8项。

大连理工大学软件工程学科以打造高水平软件服务与应用平台和海洋信息处理与计算平台为目标，建有数据科学与数字信息服务研究所、泛在网络与计算研究所、高性能计算研究所、软件安全与系统研究所，以及软件工程理论与技术研究所。建有数字家庭综合实验室、PCB制版实验室&物联网节点研制实验室、实时三维几何及多视角图像同步采集实验室、三维打印研究实验室、三维扫描与精密测量实验室，并于2014年10月获批组建泛在网络与服务软件辽宁省重点实验室。

必修课：

中国文化概况（英文授课）、汉语听说基础（英文授课的国际博士选课）、论文写作与学术规范（英文授课）、非线性分析、软件工程方法论、图论

**Software Engineering**

Name of specialty: Software Engineering

Credit system: 3 years

Brief Introduction

Software Engineering First-leveled Discipline of Dalian University of Technology adheres to the guideline of “new ideas, new areas and new methods” to boost academic development. Following the basic concept of “Software + X”, a unique academic orientation of “Software + Ocean” has been formulated. Presently, Software Engineering First-leveled Discipline of Dalian University of Technology is operating on a “3 + 1” mode of development, which means 3 second-leveled disciplines (Software Engineering Theory and Technology, Data Science & Machine Intelligence, Ubiquitous Network & Trusted Technology) to support the top prioritized 1 second-leveled discipline, namely, Marine Information Processing and Computing.

Currently, this discipline is staffed with 108 full-time teachers, including 16 professors, 38 associate professors, 16 Ph.D. supervisors, 1 winner (Yin Baocai) of National Science Fund for Distinguished Young Scholars, 5 “New Century Excellent Talents” granted by the Ministry of Education, 1 Overseas Academic Master, and 13 “Haitian Scholars”, 6 part-time professors (including Professor Gao Wen, member of Chinese Academy of Engineering, vice Deputy Director of the National Fund, honorary Dean of our school), 1 winner of “Highly Cited Chinese Researchers” in 2014 and 2015 respectively, 1 earners of “National Xiangjiang Scholar Project”, 2 earners of “Xing Hai Excellent Youth”, as well as more than 90 part time teachers from business and companies. More than 50% of the teachers have overseas academic background. The faculty is made up of high level teachers, featuring high-end talents as the lead, young teachers as the backbone, and a combination of part time and full time teachers.

Teachers in this discipline have published more than 540 academic papers totally, including more than 200 SCI papers, more than 50 academic papers published in high-level journals that are recognized as top A(-tier) journals, top B journals and top A-conference journals by China Computer Federation. The scientific fund reached RMB11.1mil. in 2015 and more than 60 funds have been approved by National Natural Science Funds, including 3 key programs (as Principal Investigators or Chief Collaborator) and 1 Training Program of the Major Research Plan of the National Natural Science Foundation of China. The faculty undertake 3 national defense programs, participate in 1 “973 Project”, 3 “863 Projects” and lead over 25 provincial projects and more than 20 municipal scientific projects. Our faculty has patented more than 20 National Inventions and more than 70 Software Copyrights. In the past three years, five courses have been approved as Liaoning Provincial "Excellent Resource & Sharing Course" and the Ministry of Education-IBM "Excellent Courses", and eight courses have been approved as co-constructed MOOCs with Software Schools Alliance.

Software Engineering Discipline of Dalian University of Technology sticks to its goal of building high-level Software Service & Application Platform and Marine Information Processing & Computing Platform. It has set up the Institute of Data Science & Digital Information Processing, Institute of Ubiquitous Networks & Computing, Institute of High Performance Computing, Institute of Software Security & Information Security, and Institute of Software Engineering Theory & Technology. Meanwhile, PCB Plate Lab, IOT (Internet of Things) Node Research Lab, Real-time 3D Geometric & Synchronous multi-view Image Acquisition Lab

Main Course

Compulsory courses :

Overview of Chinese Culture (English-taught), Chinese Listening and Speaking (For English-taught doctor program), Papers Writing and Academic Standards, Nonlinear Analysis, Methodology of Software Engineering, Graph Theory