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香港城市大學(東莞) 本科專業介紹

UNDERGRADUATE MAJOR INTRODUCTION



教研合一 / 兩校一質 / 創新無限

Integration of Teaching and Research / Consistency in Academic Excellence / Innovating into the Future



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计算机科学与技术

COMPUTER SCIENCE



01 课程目标

本专业旨在提供最优质的本科教育,注重计算机科学理论、实践动手能力以及软件工程知识的均衡发展,而这些都是成为专业软件开发人员、系统分析师、系统架构师和技术主管等职业的必备技能。我们设置的不同学习方向能够让学生能够在各专业领域钻研深耕。此外,项目中包含的必修实习环节能够让学生获得实际工作经验,这将为他们毕业后的就业提供显著优势。

02 课程结构

课程设置包括计算机核心课程和丰富多样的前沿选修课程。此外,我们提供不同的自由学习方向,使学生能够在所感兴趣的领域不断探索创造,培养属于每个学生独一无二的核心竞争力。

03 特色模块:必修信息技术专业实习计划

待完成两年或三年全日制学习后,学生将在第三或第四学年参加为期两学期的信息技术专业实习(ITPP)课程,在此期间他们可以将课堂所学知识融会贯通到真实的工作场景中。参与合作企业包括华为、腾讯、百度、字节跳动、OPPO、微众银行等国际知名科技公司。



本专业的教学目标是培养具备以下能力的毕业生:

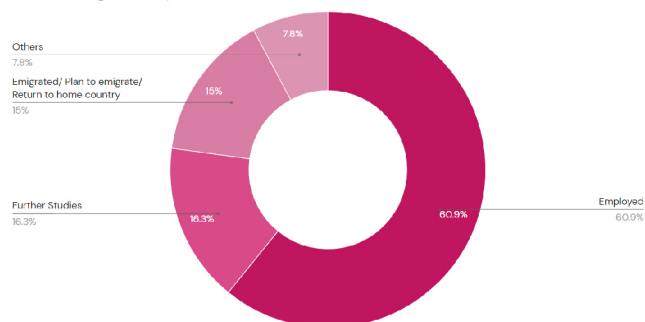
- 拥有扎实的计算机科学技术基础,以及创造性地将计算机和相关技术应用于实际问题的能力。
- 具备作为高效专业人士所需的沟通能力和软技能。
- 丰富专业领域知识储备,建立跨学科视野以及培养对前沿计算机科学知识的持续探索力。



04 就业前景与深造

本项目的毕业生凭借一年的实习经验,在近期的毕业生就业调查中取得了极高的就业率。2023年计算机科学学士毕业生中,**60.9%**选择就业,**16.3%**继续深造,**15%**返回原籍国、移民或计划移民。选择继续深造的学生收到了多所知名大学的录取通知,包括麻省理工学院、卡内基梅隆大学、哥伦比亚大学、苏黎世联邦理工学院、约翰霍普金斯大学、南洋理工大学、加州大学圣地亚哥分校、伊利诺伊大学厄巴纳-香槟分校以及滑铁卢大学等。

(From CityUHK)



05 计算机科学系师资



07 专业排名

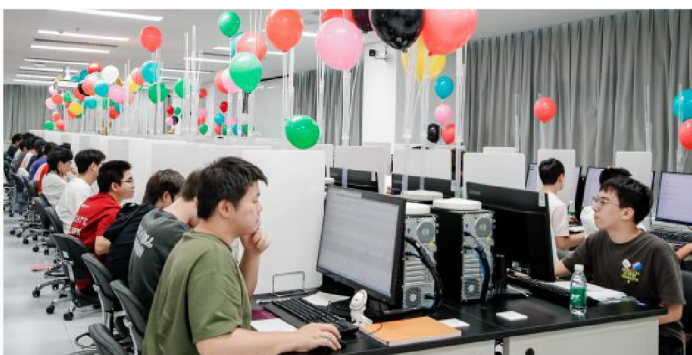


06 教职员工成就



CityU 香港城市大學(東莞)
City University of Hong Kong (Dongguan)

08 学生活动





材料科学与工程

MATERIALS SCIENCE AND ENGINEERING

香港城市大學(東莞)
City University of Hong Kong
(Dongguan)

CityU

Celebrating the Establishment
in Year 2024

01 INTRODUCTION

Being the first of its kind in Hong Kong, the Department of Materials Science and Engineering is established to develop internationally competitive and leading-edge research and provide a professional education curriculum that equips graduates to contribute to Greater China region, the Hong Kong, and the world in materials science and engineering and related sectors. The Department serves as a collaboration platform for developing cross-disciplinary academic programmes and interdisciplinary research projects with other academic units in the University. **Furthermore, it aspires to become one of the world-leading departments in research and professional education with a focus on four targeted areas, namely:**

- ❖ Computational materials science
- ❖ Functional materials
- ❖ Structural materials
- ❖ Materials characterization techniques

香港城市大学材料科学与工程系, 作为香港首所开创此专业的高等学府, 旨在发展具有国际竞争力的前沿研究, 并提供专业的教育课程, 培养毕业生为大中华、香港地区乃至全球的材料科学与工程及相关领域作出贡献。材料科学与工程系将作为协作平台, 与大学内其他学术单位共同发展跨学科教学项目及学科交叉研究项目。**此外, 本专业致力于在以下四个重点领域, 成为世界领先的研究及专业教育学系之一:**

01 计算材料科学

02 功能材料

03 结构材料

04 材料表征技术

This program is dedicated to equipping students with comprehensive expertise in the production, processing, performance analysis, and practical application of materials. Graduates will develop strong communication skills, computer proficiency, and quantitative analysis skills, alongside mastering critical analysis for problem-solving. They will be capable of collaborating with engineering professionals to participate in the design, manufacturing, maintenance, testing, and safety assessment of engineering components, equipment, structures, and processes. Furthermore, graduates will cultivate a profound understanding of their professional context, enabling them to proactively plan their career trajectories. By integrating acquired knowledge, they will advance original research or innovative design within the field of materials engineering.

本专业致力于培养学生全面掌握材料的生产加工、性能分析与实际应用。毕业生将具备良好的沟通能力、计算机应用能力和定量分析能力, 同时掌握批判性分析问题的思维方法。他们能够与工程领域专业人士协同合作, 参与工程零部件、设备、结构及工艺流程的设计、制造、维护、测试及安全评估工作。毕业生还将形成对专业背景的深刻认知, 主动规划个人职业发展路径, 通过综合运用所学知识, 推动材料工程领域的原创性研究或创新设计。

Join the MSE to Make Something Extraordinary!

The Materials Science and Engineering major is the first and currently the only Materials Science and Engineering degree accredited by the Hong Kong Institution of Engineers.

加入材料科学与工程系, 铸就非凡!

材料科学与工程 (MSE) 专业是香港工程师学会首个认证的亦是目前唯一认证的材料科学与工程学位课程。

02 RANKINGS 排名



香港地区第1名;US news 全球排名前10, 上海软科排名全球前20

03 PROFESSORS 教授

- 69 Professors at CityUHK and 8 Professors at CityUHK(DG)
- 9 MSE Faculty recognized as World's TOP 0.05% Highly Ranked Scholars 2024
- 8 Materials Science and Engineering Academicians



- 69位香港城市大学教授以及8位香港城市大学(东莞)教授
- 9位材料科学与工程系教授入选**全球前0.05%**高被引学者(2024)
- 8位材料科学与工程院士

05 CAREER PROSPECTS 就业前景



Materials Science and Engineering is an exciting and fascinating subject. Many of the novel materials invented over the past few decades significantly influence the way we live. It has permeated all industrial sectors. Graduates may choose to work in many different areas such as the electronics, toy, plastic, metal, ceramic and construction industries, or in testing laboratories. Graduates may also be employed as quality control engineers, production engineers, testing engineers or technical sales engineers for equipment, machinery and materials.

04 CURRICULUM STRUCTURE OF BENG – MATERIALS SCIENCE AND ENGINEERING

First Year after Declaring Major

- Engineering Foundation Courses (Physics, Chemistry, Math)
- Introduction on Materials Science (Nano, Bio, Construction, Electronics, Composition, etc.)

After the First Year

- Properties of Materials (e.g. Structural, Mechanical, Electronic, Chemical)
- Computational (AI) Techniques for Materials Analysis
- Materials Design and Research-based Projects
- Industrial/ Research Internships and Overseas Exchange Programs

材料科学与工程专业课程结构

选专业后的第一年

- 工程基础类课程(物理、化学、数学)
- 材料科学导论(纳米、生物、建筑、电子、复合材料等)

第一年后

- 材料特性相关课程(诸如结构、机械、电子、化学性质等)
- 计算材料学与人工智能
- 材料设计等以科研为基础的课程项目
- 工业/科研实习以及海外交流项目

材料科学与工程是一门充满活力且引人入胜的学科。过去几十年间发明的众多新型材料,极大地影响了我们的生活方式。它已深入渗透于所有工业领域。毕业生可选择在众多不同领域工作,例如电子业、玩具业、塑料业、金属业、陶瓷业、建筑业或检测实验室。毕业生亦可受聘担任质量管控工程师、生产工程师、测试工程师,或是设备、机械及材料的技术销售工程师。

Industrial Training: The College of Engineering and the Department offer work placement opportunities through different internship schemes that provide students with full-time job attachments in firms in Hong Kong, the Pearl River Delta region and overseas. Through such placements, students will:

- Gain solid experience in a real-world work environment;
- Develop problem-solving abilities and interpersonal skills;
- Learn the right attitudes towards work and professionalism; and
- Broaden their experience and enhance their employability.

就业培训计划:工程学院及材料科学与工程系通过不同的实习计划,提供在香港、珠江三角洲地区及海外企业的全职工作实习岗位。学生通过这些实习机会将:

- 在真实工作环境中获得扎实经验;
- 培养解决问题的能力 and 人际交往技巧;
- 学习正确的工作态度和职业精神;
- 拓展经验并提升就业竞争力。

能源与动力工程

ENERGY SCIENCE AND ENGINEERING



01 INTRODUCTION

The School of Energy and Environment (SEE) - the first in Hong Kong - was founded in July 2009 with the mission to perform cutting-edge research and provide professional education in energy and environment-related issues. SEE is designed to tackle interactive relationship between energy and environment through the development of new scientific understanding and new technologies as well as the training of new professionals with broad knowledge in the areas of energy and environment.

香港城市大学能源与环境学院成立于2009年7月,是香港首所专注于能源及环境研究的高等学府。学院致力于在能源和环境相关领域开展前沿研究,并提供专业教育,旨在通过发展新的科学认知和尖端技术,培养具备广泛知识的新一代专业人士,以应对能源与环境之间日益复杂的互动关系。

We have a highly internationalized and experienced faculty from various countries specialising in atmospheric and climate science, biological science, chemistry, chemical engineering, energy economics, environmental engineering, environmental policy, mechanical engineering and materials science. Together we will nurture a new breed of engineers and professionals capable of solving energy and environmental problems.

我们汇聚了一支高度国际化且经验丰富的杰出教师团队,他们来自全球各地,在大气与气候科学、生物科学、化学、化学工程、能源经济、环境工程、环境政策、机械工程以及材料科学等诸多领域具有深厚的专业背景和卓越的教学科研能力。我们将携手努力致力于培养具备解决能源和环境问题能力的新一代工程师和专业人才,为可持续发展贡献智慧与力量。

Energy science and engineering addresses the pressing energy issue and the associated environmental problems in modern society. Key areas in energy engineering include:

- ◆ Energy management and efficiency
- ◆ Renewable energy
- ◆ Energy storage and distribution
- ◆ Energy-related pollution control and treatment

The ever-increasing energy demand and dependence of fossil fuels has led to challenges like energy security, pollution and climate change. Energy engineering transcends the boundaries of traditional engineering disciplines to address these intricate issues with innovative solutions.

能源与动力工程致力于解决现代社会中紧迫的能源问题和相关的环境问题,主要领域包括:

- ◆ 能源管理与效率
- ◆ 可再生能源
- ◆ 能源储存和分配
- ◆ 能源污染控制和治理



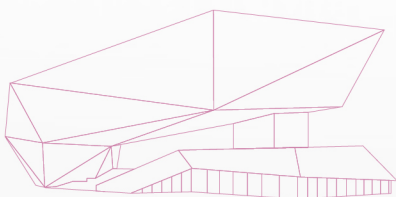
Renewable Energy



Energy Efficiency



Energy Policy



02 MAJOR THEMES 专业主题

- Renewable Energy 可再生能源
- Energy Efficiency 能源效率
- Energy Policy 能源政策

03 RANKINGS 排名



上海软科排名全球第9名, US News全球排名第8名

04 PROFESSORS 教授

- 33 Professors at CityUHK and 3 Professors at CityUHK(DG)
- 21 experts have been ranked among the top 2% most highly cited scientists globally



- 33位香港城市大学教授及3位香港城市大学(东莞)教授
- 21位专家入选全球被引用次数最多的科学家前2%

05 SIGNATURE COURSES OF BENG ESE 能源与动力工程专业特色课程

- Chemical Sciences for Energy and Environmental Engineers
- Climate Change and Adaptation Strategies
- Energy and Carbon Auditing
- Energy and Environmental Policy
- Energy Efficiency for Buildings
- Introduction to Energy and Environmental Data Analysis
- Power Plant Engineering
- Solar Energy Engineering
- Sustainable and Renewable Energy
- Wind and Marine Energy
- 能源与环境工程中的化学科学
- 气候变化与适应策略
- 能源与碳排放审计
- 能源与环境政策
- 建筑能效
- 能源与环境数据分析导论
- 电厂工程
- 太阳能工程
- 可持续与可再生能源
- 风能和海洋能源

06 CAREER PROSPECTS 就业前景



Industry Ready Programme

SEE has established the "Industry Ready Programme" since 2021, a unique programme with industry partners providing intensive training workshops for students on topics that are relevant for practitioners. Students are placed in different companies for a two-month internship related to energy, environment or sustainability after the training.

就业培训计划

自2021年以来,能源与环境学院推出了具有创新性的“就业培训计划”。这一计划独具特色,通过与行业内的合作伙伴联手,为学生开设了一系列强化培训研讨会,主题紧密围绕行业从业者的实际需求。完成培训后,学生将有机会被分配至不同企业,进行为期两个月的实习,亲身参与到能源、环境或可持续发展领域的项目中。这一计划不仅提升了学生的实践能力,也为他们未来的职业生涯奠定了坚实基础。

智能製造工程

INTELLIGENT MANUFACTURING ENGINEERING



01 培养目标

本专业旨在培育青年人才把握"工业4.0"与"智慧城市"发展机遇,培养具备智能制造系统集成能力的复合型人才。学生将通过工业物联网、自动化与机器人技术、管理分析、人工智能及工业大数据等前沿领域的学习,掌握工程科学、设计创新、自动化控制与数据分析的实践技能。

02 课程体系

该课程体系由制造工程与系统工程基础知识的核心课程组成,并配套提供覆盖多领域应用的多元化选修课程。

03 应用领域



04 核心内容

- 工程数学
- 机器和自动化
- 质量与可靠性工程
- 运筹学
- 数字孪生
- 工业物联网
- 人工智能与工业数据
- 增强现实 (AR) 与虚拟仿真
- 制造系统设计
- 半导体过程控制
- 机器人系统设计

05 就业前景



- **智能制造与自动化方向:**
自动化工程师、机器人工程师、控制系统工程师
- **AI与数据方向:**
人工智能算法工程师、工业数据分析师
- **电子与嵌入式方向:**
嵌入式系统工程师、半导体工艺工程师
- **管理与创新方向:**
项目管理、物流运营、研究与开发

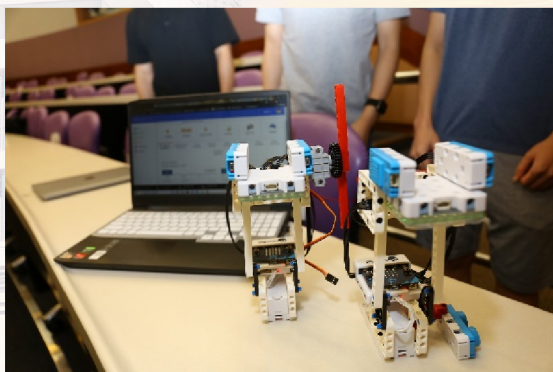
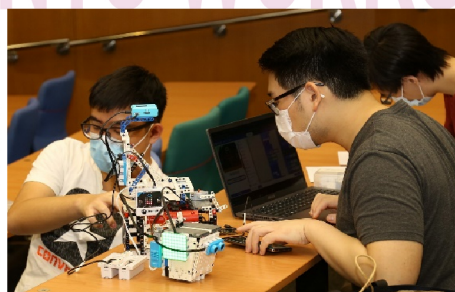


05 就业前景



06 学生作品展示

STUDENTS WORKS





香港城市大學(東莞)
City University of Hong Kong
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