

广东以色列理工学院环境工程专业人才培养方案

(专业代码: 082502H)

一、概述

本专业课程设置参照以色列理工学院环境工程专业, 设立污水处理、膜分离技术、水处理工艺设计、生物工艺数值模拟、土壤物理与化学、固体废物、环境修复、空气污染, 以及项目研究等课程。学生在掌握基础理论和技术原理的同时, 通过科研项目的训练, 学习分析问题、提炼科学问题、解决工程技术问题的能力。

二、培养目标

本专业培养具有扎实的数理生化知识基础, 熟练掌握环境工程各相关学科的基础理论和实操技能, 能够精准把握环境工程科学问题, 并对具体工程问题提出解决方案的高水平专业技术人才。毕业生能够胜任包括但不限于以下岗位: 相关行业的工艺设计师、技术工程师、技术顾问、项目经理、环保公司相关技术岗位等, 也可报考环境工程相关部门的公务员和事业单位。通过本专业严格的科学训练, 有志于深造的毕业生具备在世界一流大学攻读环境工程、化学工程等相关学科的研究生学位的能力。

三、毕业学分要求

四年制本科专业的总学分为 156.5 分, 含 2 个学分的体育课。学生还需要修满教育部规定的思想政治理论课程学分, 并达到考核合格标准。教学既包含理论教学, 也包括实践教学环节。

四、修业年限

四年, 授予广东以色列理工学院工学学士学位、以色列理工学院理学学士学位。

五、人才(学生)培养基本要求

1. 具有扎实的数学物理和化学基础, 以及过硬的工程专业技能。
2. 具备分析和解决实际工程问题的能力。
3. 具有创新型思维, 熟练掌握工程设计技能, 并能将两者融合贯通。
4. 具备实验技能、科学研究思维和基本的研究能力。
5. 具备较强的英语思辨与表达能力, 有宽阔的国际视野和较强的交流与合作能力。
6. 具有优良的创新意识、批判性思维和可持续发展理念。

六、毕业要求

本专业学生在规定年限内完成教学计划要求，取得不少于规定的 156.5 学分（包括专业核心课程 116.5 学分，专业选修课程 30.5 学分以及通识选修课程 10 学分），并且每门课程达到 55 分以上，GPA 达 65 分以上，满足国家教育部规定的思想政治理论课的学分要求，可经审核准予毕业。

七、基本信息资源

通过手册、网站等形式，提供本专业的培养方案，各课程的教学大纲、教学要求、考核要求、毕业审核要求等基本教学信息。

八、教材及参考书

选用反映国际水平的外文版教材，有利于稳妥地开展双语或全英文教学。

Cultivation Scheme of Environmental Engineering

1. Overview

The program is modeled after the Environmental Engineering program at the Technion – Israel Institute of Technology, and includes courses such as wastewater treatment, membrane separation technology, water treatment process design, numerical simulation of biological processes, soil physics and chemistry, solid waste, environmental remediation, air pollution, and project research. While mastering fundamental theories and technical principles, students will develop the ability to analyze problems, refine scientific questions, and solve engineering problems through training in research projects.

2. Program's Goal of Cultivation

This program cultivates high-level professional and technical personnel with a solid foundation in mathematics, physics, biology, and chemistry; proficient in the basic theories and practical skills of various related disciplines in environmental engineering; capable of accurately grasping scientific problems in environmental engineering and proposing solutions to specific engineering problems. Graduates are competent for positions including, but not limited to, process designers, technical engineers, technical consultants, project managers, and related technical positions in environmental protection companies in related industries. They can also apply for civil service and public institution positions in environmental engineering-related departments. Through the rigorous scientific training of this program, graduates who aspire to further their studies are capable of pursuing postgraduate degrees in environmental engineering, chemical engineering, and related disciplines at world-class universities.

3. Total Credits for Graduation

The total credits of the four-year undergraduate program are 156.5, plus moral and political theory courses requested by the China Ministry of Education. The teaching includes theoretical teaching as well as practical teaching.

4. Study Years

4 years, students will be awarded a Bachelor of Engineering degree from Guangdong Technion-Israel Institute of Technology and a Bachelor of Science degree from Technion-Israel Institute of Technology.

5. Basic Requirements for Talents (Students) Cultivation

- a. Possess a solid foundation in mathematics, physics, and chemistry, as well as strong engineering skills.
- b. Have the ability to analyze and solve practical engineering problems.
- c. Possess innovative thinking, is proficient in engineering design skills, and can integrate the two.
- d. Possess experimental skills, scientific research thinking, and basic research abilities.
- e. Possess strong English critical thinking and expression skills, a broad international perspective, and strong communication and collaboration abilities.
- f. Possess excellent innovative awareness, critical thinking, and a commitment to sustainable development.

6. Graduation Requirements

Students will graduate when fulfilling the graduation requirements within the prescribed number of years, and have at least 156.5 credits of the described structure of core (116.5 credits), program elective (30.5 credits) and general elective courses (10 credits), with a minimum grade of 55 in each course, and GPA above 65. Fulfilling the requirement of MOE moral and political theory courses, students may be approved for graduation upon review.

7. Basic Information Resources

The program cultivation schemes, syllabi, teaching criteria, and assessment criteria of courses, graduation evaluation criteria and other basic teaching information are offered in form of brochures, websites, etc.

8. Textbooks and References

Foreign language textbooks that reflect the international level are selected for steady practices of bilingual or English-language-only teaching.