



NEW ERA
INSTITUTE
OF VOCATIONAL & CONTINUING EDUCATION
新纪元技职与推广教育学院
LO2635
Owned by Dong Jao Zong Higher Learning Centre Pte Ltd (232570A)



工业产品设计

Industrial Product Design (IEIPD)

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2 年课程 Years Course

▲ 80% 实践训练
80% Practical Skills

▲ 20% 理论
20% Theory

▲ 教学媒介语以中文为主，
英文为辅
Medium of Instruction:
Chinese & Simple English

▲ 16 岁以上即可报读，
无需入学资格
Entry Requirement:
16 Years Old & Above

本课程为因应资讯科技的迅猛发展及有以下意愿的学生而设：

This qualification was developed to keep pace with the fast changing information technology sector and for candidates who want:

- 通过与工业产品设计和商业运营技能相关的科目，提供该领域的技术技能和知识。
To provide technical skills and knowledge in the field through subjects related to business operations and industrial product design services.
- 培育拥有商业运营和工业产品设计技能和实践经验的毕业生，在相关领域和产业发挥所长。
To provide a solid foundation in the skills and practice of business operation and industrial product design to prepare students for a successful career within the industries.
- 提高相关领域的专业技能和绩效。
Improve professional skills and performance in related fields.

两年制工业产品设计专业是从消费者需求出发，专门从事研究产品开发设计的专业，专业所包括的内容有产品的市场调研、设计构思、结构设计、形态设计等，强调培养学生设计创新能力、实践能力、设计管理能力和电脑辅助设计的应用能力；技术理论基础知识，还包括工业设计工程基础、人体工学、电脑辅助设计与分析、逆向工程等基础知识；培养具有新产品研究与开发能力的学生。

The two-year Vocational Course in Industrial Product Design is emphasized on the product design and development. The major subjects include concept design, structural design, industrial product design and etc. It emphasizes the cultivation of students' design innovation, design management ability and computer-aided design application; Basic knowledge of technical skills, including basic knowledge of industrial design engineering, ergonomics, computer-aided design and analysis, reverse engineering, etc.

学生将学习 / Students will learn and be able to:

- ▲ 根据相应的机械工作原理、结构、零件的材料分析等，通过电脑辅助设计技术CAD进行工业产品设计，其中包含三维建模与曲面建模。
Based on the mechanical principles, to learn product mechanism and material analysis by using Computer Aided Design (CAD) software included 3D modelling and surface modelling.
- ▲ 机械绘图内容包括草图、等轴测视图、正交视图、装配图和几何尺寸与几何公差规范(GD&T)等基础技术。
Mechanical drawing including sketching, isometric, orthographic, assembly and Geometric Dimensioning and Tolerance (GD&T)
- ▲ 依据工业制造的规范，实施产品设计流程，包括原型设计，材料遴选，可供制造和装配的设计(DFMA)等知识，通过实际案例进行设计。
Procedures of the industrial product design, included prototyping development, material selection, Design for Manufacturing and Assembly (DFMA).
- ▲ 通过电脑辅助工程分析(CAE)，对产品进行有限元分析技术(FEA)，从而了解与解决产品在材料与结构方面的问题。
Through Computer-Aided Engineering Analysis (CAE), the Finite Element Analysis (FEA) is carried out to understand and solve the material and structural problems of the product.
- ▲ 学习人体工学设计，使得产品的设计符合人体的自然形态，身体不需要任何主动适应，从而提高舒适度与减少使用产品造成的疲劳。
Learn ergonomic design for production of products that conform to human morphology and to the extent that no active adaptations of human body is needed, thereby improving comfortableness and reducing fatigue caused by the products.
- ▲ 逆向工程(又称反向技术)，是对产品进行再生产和逆向分析，推导出产品的加工流程、组织结构、功能特性和技术规格等设计要素的过程。
Reverse engineering is a process of product reproduction and reverse analysis to deduce and obtain the processing flow, organizational structure, functional characteristics and technical specifications of the product and other design elements.

课程内容 | COURSE OUTLINE

- 工程安全与质量管理
Engineering Safety & Quality Management
- 工程图纸规格与技能
Technical Drawing
- 代数与三角学
Algebra & Trigonometry
- 电脑辅助设计
Computer Aided Design
- 与工作相关的软技能
Work-based Soft Skills
- 机械运动与动力学
Kinematic and Dynamic
- 先进制造与材料力学
Advanced Machining & Material
- 金属加工与制造过程
Metal Machining and Manufacturing Process
- 表面造型设计
Surface Modeling Design
- 机械制图与投影
Mechanical Drawing Development
- 工业产品设计
Industrial Product Design
- 电脑辅助制造
Computer Aided Manufacture
- 热流体
Thermofluid
- 材料选择与规格
Material Selection & Specification
- 机器元件设计
Machine Element Design
- 液压与气动技术
Hydraulic & Pneumatic
- 人体工学
Ergonomic
- 有限元分析技术 (FEA)
Finite Element Analysis
- 工业自动化与机器人
Industrial Automation and Robotics
- 职场英语1
Workplace English Communication 1
- 职场英语2
Workplace English Communication 2
- 零件装配图
Assembly Drawing
- ICT电脑技能
Practical ICT Skills
- 逆向工程
Reverse Engineering
- 可持续性设计
Sustainable Design
- 创新产品开发与管理
Innovation Management and New Product Development
- Adobe Illustrator概论
Introduction to Adobe Illustrator
- Adobe Photoshop概论
Introduction to Adobe Photoshop
- 创意与创新创业
Creativity, Innovation & Entrepreneurship
- 工业产品设计 (毕业制作)
Industrial Product Design (Major Project)

* Please note that the modules listed are indicative and may be subject to change.



评估标准 | ASSESSMENT

100%作业及实践练习，本课程提供工业产品设计的理论20%与实践80%，聚焦于工作场所的实际应用。

鼓励团队合作，让学生学会分组合作或单独工作以完成专题作业。

100% Assignment and Practical Exercises. The course offers both the theory (20%) and practice (80%) of Industrial Product Design, with a focus on the practical application of these skills in the workplace.

Teamwork is encouraged and students learn to work in groups or individual to complete their projects.



考取资格 | QUALIFICATIONS

英国国立西苏格兰学院专业文凭

Diploma awarded by West College Scotland, UK

英国国立西苏格兰学院高级专业文凭

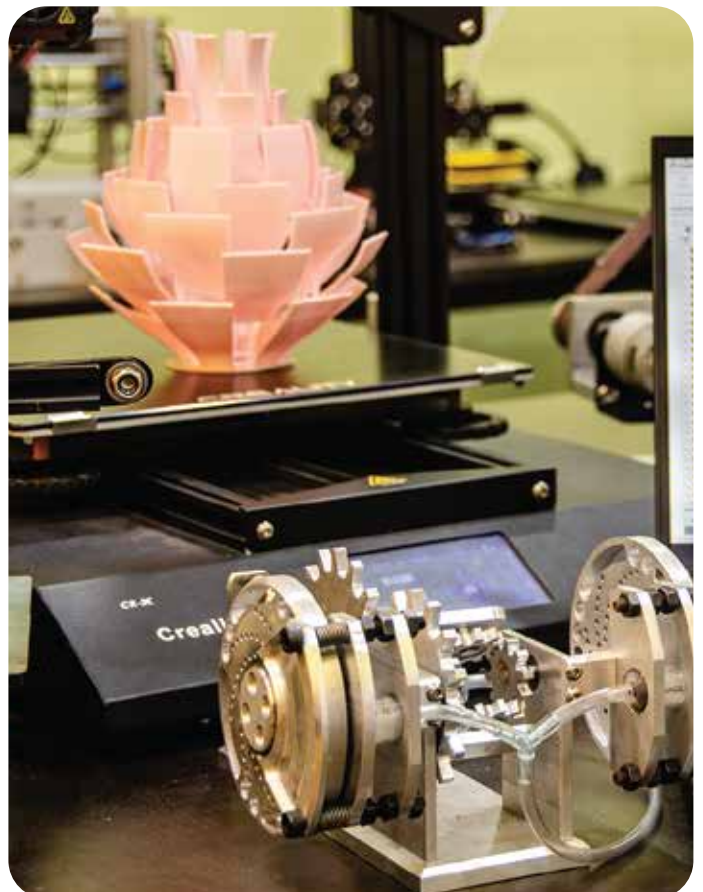
Advanced Diploma awarded by West College Scotland, UK



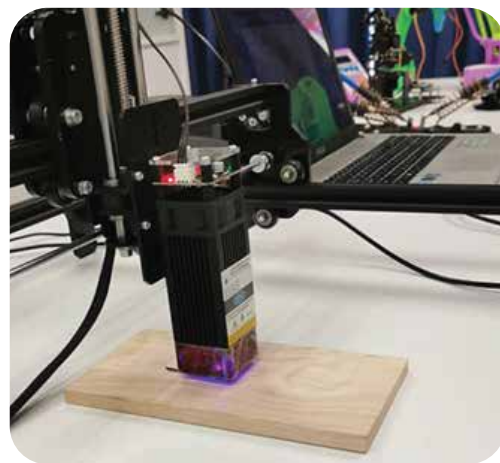
就业前景 | CAREER PATHWAYS

产品设计与研发专员，机械绘图师，产品结构分析师，工业零件设计师，家具设计师等领域。

Research and Development, mechanical drafters, product structure analysts, industrial parts designers, furniture designers and other industrial design fields.



培养学生设计创新能力、实践能力、设计管理能力和电脑辅助设计的应用能力。
Cultivate students' design innovation ability, practical ability, design management ability and computer-aided design application ability.



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