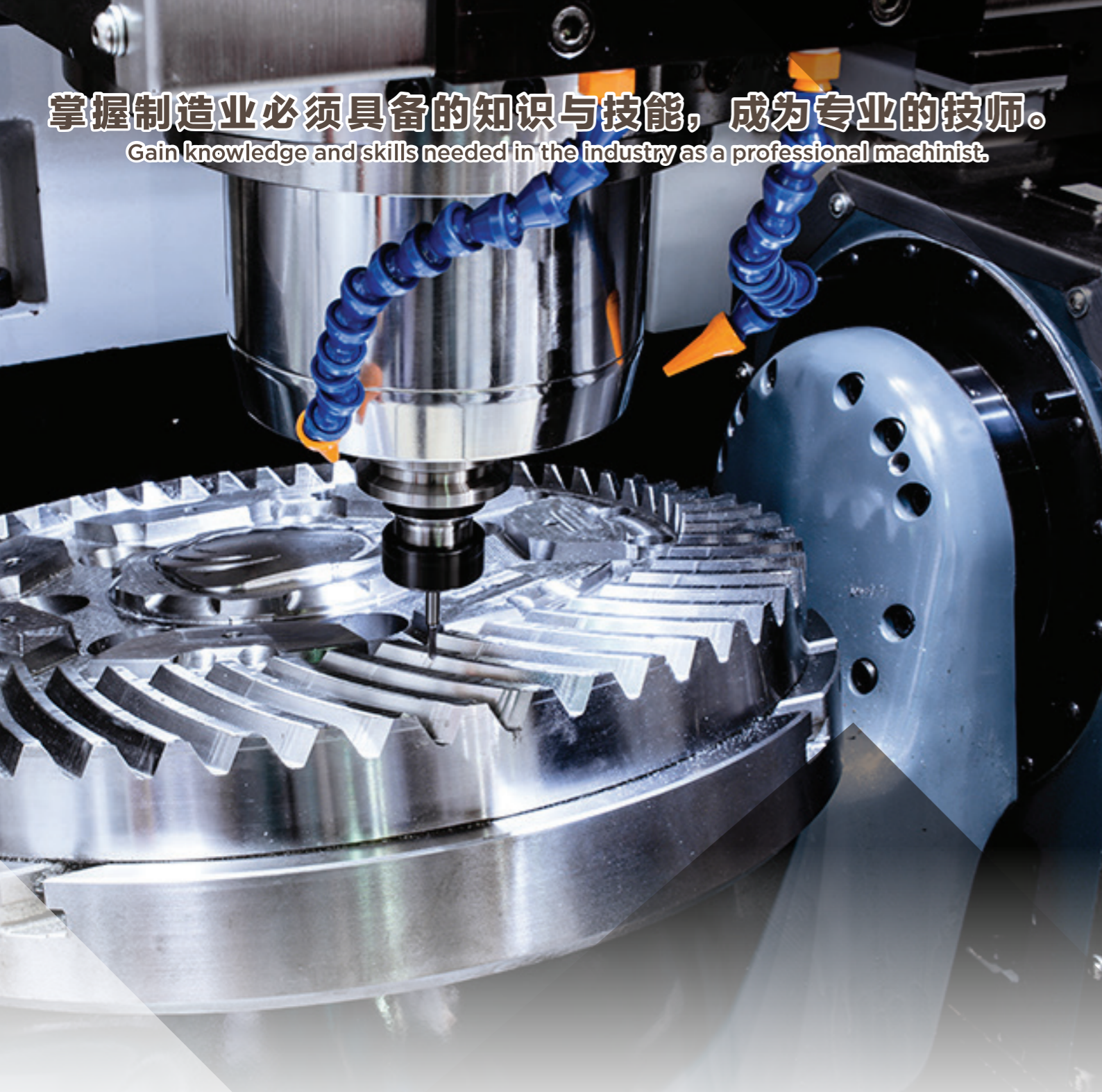


掌握制造业必须具备的知识与技能，成为专业的技师。
Gain knowledge and skills needed in the industry as a professional machinist.



工业工程 机械设计与制造

Industrial Engineering
**Mechanical Design and Manufacture
(IEMDM)**

- ▲ 80% 实践训练
80% Practical Skills
- ▲ 20% 理论
20% Theory
- ▲ 2年课程
2 Years Learning
- ▲ 16岁以上即可报读, 无需入学资格
Entry Requirement: 16 Years Old & Above
- ▲ 教学媒介语以中文为主, 英文为辅
Medium of Instruction: Chinese & Simple English



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011-6051 0218 | 011-1688 4915 (DEPARTMENT OF SMART INDUSTRIAL AND HOSPITALITY)
017-394 0668 | 010-907 5842 (DEPARTMENT OF INNOVATION AND TECHNOLOGY)
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工业工程 机械设计与制造

INDUSTRIAL ENGINEERING
Mechanical Design and Manufacture (IEMDM)

2年课程 Years Course

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 :

- 在制造业谋求职业发展。
Career progression within the manufacturing industry.
- 掌握制造业必须具备的知识与技能，成为专业的数控机床操作技师、数控机床编程技师、机械设计工程师或产品绘图与设计师等等。
To gain knowledge and skills needed to work in the industry as a professional machinist, CNC programmer, mechanical design engineer, product designer and etc.
- 培养技能型、复合型工程技术人材。
To cultivate skilled and professional talents.
- 引导学生掌握相关技能，提高学生就业能力。
To equip participants with the range of skills to enhance their employment opportunities.

两年制机械绘图与制造专业技职课程为学生提供3D绘图技术、电脑辅助制造CAM技术、制造技术、数控原理与编程、数控机器操作的实践知识与技能，提高学生就业能力和素质。

The two-year Vocational Course in Mechanical Design and Manufacture provides student with hands-on knowledge of 3D drawing skills, computer aided manufacture, manufacturing skills, part programming, CNC machine operation to enhance their employment opportunities.

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进行产品设计，其中包含三维建模、曲面建模与钣金设计。
Based on the mechanical principles, to learn product mechanism and material analysis by using Computer Aided Design (CAD) software included 3D modelling, surface modelling and sheet metal design.
- ▲ 涵盖电脑辅助制造技术CAM进行三维建模与机床参数模拟。
Learn computer Aided Manufacturing (CAM) software to develop 3D modelling, machining parameters setting and simulation.
- ▲ 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, including prototyping development, material selection, Design for Manufacturing and Assembly (DFMA).
- ▲ 掌握数控机床CNC实际操作、编程技术、加工参数及各类刀具应用。
Operation of CNC machining, part programming, machining parameters and application of various cutting tools.
- ▲ 包含机械元件设计、机床、油压与气动原理，夹具设计等科目，掌握更全面的机械设计与制造的技术。
Mechanical design skills included machine element design, machine tools, hydraulic & pneumatic, jig & fixture and etc.
- ▲ 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)
- ▲ 科技引领的先进制造技术 (Advanced Machining)原理，应用范围与需求，以至实践操作。
Various types of Advanced Machining working principles, application requirements and practical operation skills.

课程内容 | COURSE OUTLINE

- 工程安全与质量管理
Engineering Safety & Quality Management
- 代数与三角学
Algebra & Trigonometry
- 机械运动与动力学
Kinematic and Dynamic
- 电气学概论
Electrical
- ICT实务技能
Practical ICT Skills
- 工程图纸规格与技能
Technical Drawing
- 机械制图与投影
Mechanical Drawing Development
- 零件装配图
Assembly Drawing
- 电脑辅助设计
Computer Aided Design
- 3D建模与组装
3D Modeling
- 数控编程软件与加工模拟
Computer Aided Manufacture
- 金属加工与制造过程
Metal Machining and Manufacturing Process
- 数控机床加工编程
Part Programming
- 工具应用与手动式机床
Workshop Fundamental
- 机器元件设计
Machine Element Design
- 机床
Machine Tool
- 先进制造与材料力学
Advanced Machining and Materials
- 液压与气动技术
Hydraulic & Pneumatic
- 工业产品设计
Industrial Product Design
- 数控车床
CNC Turning
- 数控铣床
CNC Milling
- 机械设备设计与开发(毕业制作)
Mechanical Equipment Development (Major Project)
- 实习
Internship

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



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评估标准 | ASSESSMENT

100%作业及实践练习，本课程提供机械设计与制造的理论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 Mechanical Design and Manufacture, 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和高级专业文凭

Diploma and Advanced Diploma awarded by West College Scotland, UK



就业前景 | CAREER PATHWAYS

数控机床操作技师、数控机床编程技师、机械设计工程师、机械绘图师、产品设计师、模具设计师。
Machinist, CNC Programmer, Mechanical Design Engineer, Mechanical Draftsman, Product Designer, Mold Designer.

