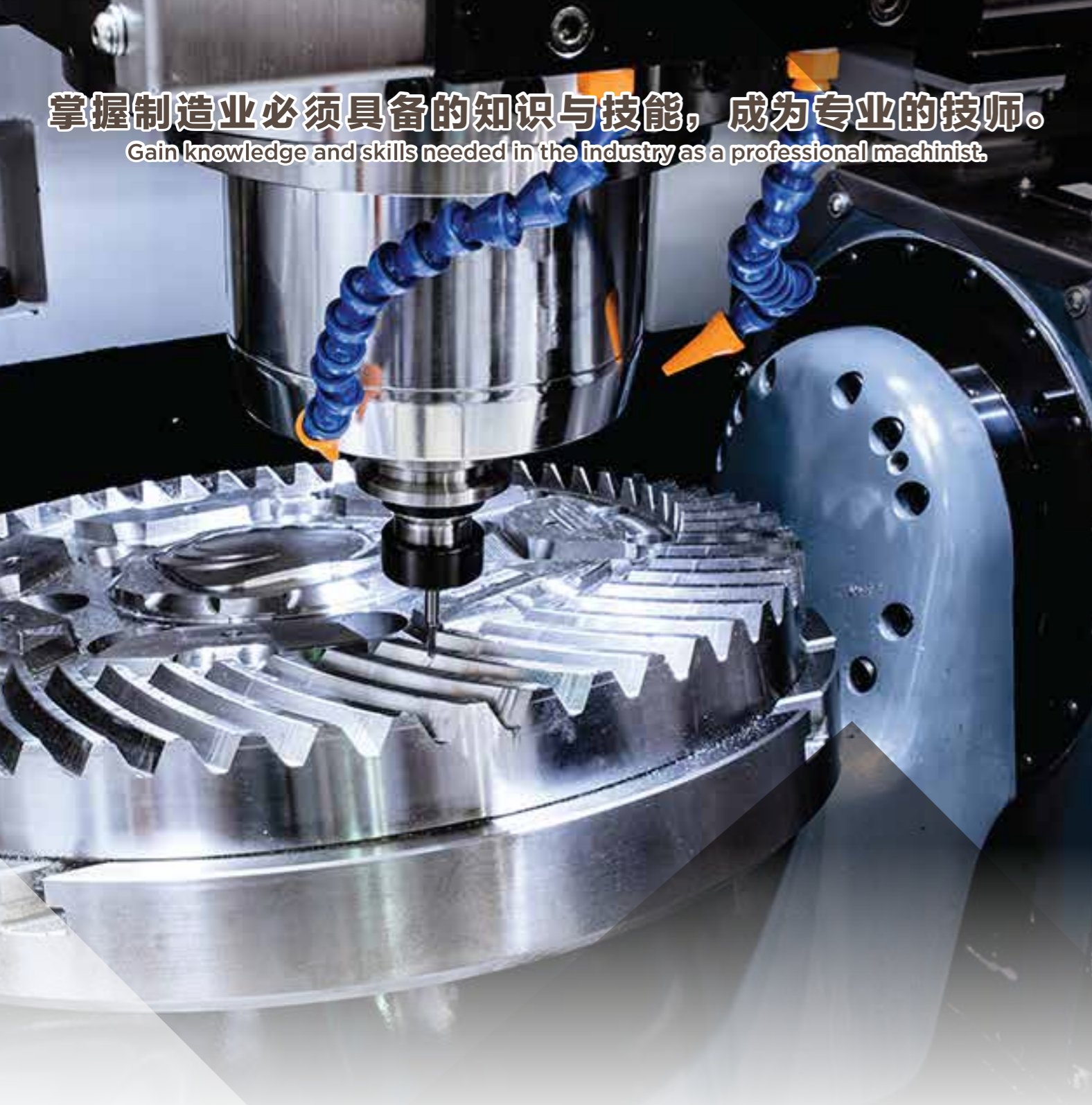


掌握制造业必须具备的知识与技能，成为专业的技师。

Gain knowledge and skills needed in the industry as a professional machinist.



NEW ERA  
INSTITUTE  
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新纪元技职与推广教育学院  
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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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016-429 7793 | 010-838 7925 (DEPARTMENT OF CREATIVE MEDIA AND BEAUTY STUDIES)

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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 2 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.

