掌握制造业必须具备的知识与技能
成为专业的工业机器人程序员。

To master the skills needed in the industry
as a professional industrial robot programmer.

NEW ERA INSTITUTE
OF VOCATIONAL & CONTINUING EDUCATION
新纪元技职与推广教育学院
L02635
Owned by Dong Jiao Zong Higher Learning Centre Bhd (292570A)

B5-B7, Block B, Jalan TKS 1, Taman Kajang Sentral, 43000 Kajang, Selangor DE, Malaysia.

017-372 0230 | 011-1059 9071 (DEPARTMENT OF INDUSTRIAL ENGINEERING)
011-6051 0218 | 011-1688 4915 (DEPARTMENT OF SMART INDUSTRIAL AND HOSPITALITY)
017-394 0668 | 010-907 5842 (DEPARTMENT OF INNOVATION AND TECHNOLOGY)
016-429 7793 | 013-727 2586 (DEPARTMENT OF CREATIVE MEDIA AND BEAUTY STUDIES)
03-8737 8770 | 03-8737 9292 (GENERAL LINE)

enrolment@neivce.edu.my neivce www.neivce.edu.my

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工业工程

工业机器人科技

Industrial Engineering

Industrial Robotics Technology (IEIRT)

- 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*

工业工程

工业机器人科技

INDUSTRIAL ENGINEERING

Industrial Robotics Technology (IEIRT)

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，成为专业的工业机器人程序员, 工业机器人技术师，自动化技术师，自动化编程员，机械制图师等等。
  To gain knowledge and skills needed to work in the industry as a professional industrial robot programmer, industrial robot technician, automation technician, PLC programmer, mechanical draftsman 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.

两年的工业机器人科技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,工业机器人在线与离线编程，工业机器人应用的实践知识与技能，提高学生就业能力和素质。

The two-year Vocational Course in Industrial Robotics Technology provide student with hand-on knowledge of 3D drawing skills, computer aided manufacture, manufacturing skill, online and offline programming for industrial robots, industrial robot application 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.
- 掌握可编程逻辑控制器的基本原理，功能，应用，程序设计方法和编程技巧，使学生掌握PLC控制技术的基本原理和应用，为今后从事机电，自动控制等领域的工作打下基础。
  Provides a comprehensive understanding of the principles, functions, applications, programming methods, and techniques of programmable logic controllers (PLCs). It equips students with the essential knowledge of PLC control technology, forming a solid foundation for careers in fields such as electromechanics and automation.
- 掌握包括机器人发展历程，工业机器人的分类，工业机器人的组成和性能参数，工业机器人的结构，工业机器人的使用与维修，工业机器人控制技术，工业机器人传感系统，机器人典型应用等内容。当中还包括工业机器人现场与离线编程。
  Master the knowledge including the development history of robots, classification of industrial robots, components and performance parameters of industrial robots, structure of industrial robots, usage and maintenance of industrial robots, industrial robot control technology, industrial robot sensing systems, and typical applications of robots. This also includes both on-site and offline programming of industrial robots.
- 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，以及实践操作。
  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 and Quality Management
- 电气学概论
  Electrical
- 电子学概论
  Electronics
- ICT 实务技能
  Practical ICT Skills
- 工程图纸规格与技能
  Technical Drawing
- 代数与三角学
  Algebra & Trigonometry
- 机械运动与动力学
  Kinematic and Dynamic
- 机械制图与投影
  Mechanical Drawing Development
- 零件装配图
  Assembly Drawing
- 3D建模与组装
  3D Modeling
- 电脑辅助设计
  Computer Aided Design
- 数控编程软件与加工模拟
  Computer Aided Manufacture
- 工具应用与手动式机床
  Workshop Fundamental
- 金属加工与制造过程
  Metal Machining and Manufacturing Process
- 先进制造与材料力学
  Advance Machining and Materials
- 液压与气动技术
  Hydralic & Pneumatic
- 电气电工布线
  Electrical Wiring and Installation
- 数控技术
  CNC Technology
- 可编程逻辑控制器（PLC）
  Programmable Logic Circuits (PLC)
- 工业自动化与机器人
  Industry Automation and Robotics
- 工业机器人在线编程
  Online Programming for Industrial Robots
- 工业机器人离线编程
  Offline Programming for Industrial Robots
- 工业机器人安装与保修
  Installation and Warranty of Industrial Robots
- 工业机器人应用与系统
  Applications and Systems of Industrial Robots
- 工业机器人应用项目（毕业制造）
  Industrial Robot Application Project (Major Project)
- 受监督工业培训（实习）
  Supervised Industrial Training (Internship)

** 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，本课程提供工业机器人科技的理论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 robotics technology skills, 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

工业机器人程序员，工业机器人技术师，自动化技术师，自动化编程员，机械制图师。

Industrial Robot Programmer, Industrial Robot Technician, Automation Technician, PLC Programmer, Mechanical Draftsman, etc.