

Skills to transform businesses for Industry 4.0

The fourth industrial revolution (Industry 4.0) is rapidly transforming how businesses operate across almost every industry worldwide.

Overview

Industry 4.0 technologies are giving manufacturers faster, more flexible, and more efficient processes to produce higher-quality goods and at lower costs.

One of the challenges that comes with modern technology is the new skills that are needed from employees to run the machines, code up new processes and fix new devices. Across the board, the traditional employment system is changing and skills development is the name of the game.

Employers need to shape the skills they need to inject fresh ideas into their business. They need to identify where automation could transform their organisation and build a strategy to reskill their workforce to adapt to requirements of the digital economy.

Individuals need to be tech-savvy critical thinkers who can collaborate virtually, problem solve and translate vast amounts of data to understand reasoning. They must regularly upgrade their skills to gain and retain employment.

Our services

North Metropolitan TAFE (NMTAFE) collaborates with the Department of Training and Workforce Development, Industry Training Councils and other peak bodies to identify the evolving new technologies and skills needed to ensure that our curriculum and training strategies keep pace with innovations across all industries.

Our services include:

- Training needs analysis and workforce development planning
- Nationally recognised qualifications, units or skills sets
- Recognition of Prior Learning (RPL) and verification of competencies.
- Training delivered in the workplace, onsite or at one of our campuses

Our expertise

Augmented and Virtual Reality

- Software Development students developed:
 - » GLEAMOSCOPE VR (with International Centre for Radio Astronomy Research), an app to give user experience of standing at the Murchison Radio-Astronomy Observatory.
 - » Woodside Australian Science Project (WASP) app to give school students the opportunity to explore 360° views of key field locations around Perth and collect rocks that are found there.
- Mobile Cut Mine features VR technology to teach students/public about the technology used in mining.

A Robotics and Automation

- A Certificate II in Integrated Technologies (Robotics Control Systems) for those interested in a career in robotics, automation and mechatronics.
- Drone Technology in Mining and Surveying
- Laboratory with equipment to automate process of tissue preparation, analysing blood samples and water testing.

B Renewable Energy

- Upskilling of Western/Horizon Power employees to operate, maintain and repair Stand-alone Power System (SPS) units which combine solar and battery technology with a backup generator, across WA.
- Green Skills Training Centre (East Perth) - 6 star Green Building, demonstrating sustainable technology within the architecture, construction, landscaping and engineering principles.

Big Data

- Total Station Theodolite (TST) used to collect data and perform calculations in Surveying.
- Collating Air Quality data as part of the Environmental Citizen Science Project.

C Cyber Security

- Cyber Security Training Centre (Joondalup) featuring a hackers den, defence hub and control centre.
- Joondalup Innovation Hub partnership with ECU, AustCyber, City of Joondalup and WA Police.
- Cybercheck.me initiative to allow students to provide SMEs with cyber precautions at public events.
- Student "ethical hacker" team at National Missing Persons Hackathon.

Internet of Things

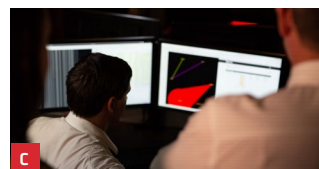
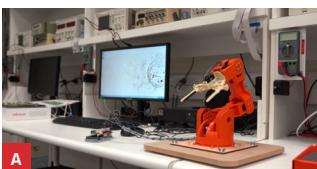
- Collating Air Quality data as part of the Environmental Citizen Science Project.

D Simulation

- Underground Cut Mine (Perth) and Mobile Cut Mine with built-in VR technology.
- Commercial Laboratory (East Perth) to prepare students for careers in chemical, medical and pathological, mining, biological, and environmental fields.
- Hospitals (Mt Lawley and Joondalup McLarty) featuring 3G Sim Man and Sim Patients to fully immerse nursing and health students into patient scenarios.

3D

- Computer-aided design (CAD) software from AutoCAD, Microstation, REVIT and 12D used in Civil & Structural Engineering, Engineering-Technical and Residential Building Drafting.
- Design 3D projects in Building Design and Interior Design.
- Autodesk REVIT skillset – covers concepts of 3D computer modelling and the tools required for parametric building design and documentation.
- Building Information Management (BIM) skillset – digital delivery of building and infrastructure.
- Mine Induction Training and Mines Emergency Rescue competition.



Job role

NMTAFE programs - visit northmetrotafe.wa.edu.au/courses for more details

Simulation, 3D and Augmented Reality

Digital Artist	Certificate III in Screen & Media (Digital)
Technical Artist	Certificate IV in Screen & Media (Animation & Games Art)
Student Animator	Certificate IV in Screen & Media (Animation & Visualisation)
AR and VR Development	Diploma of Screen & Media (Animation & Games Art)
Visual Effects Artists	Diploma of Screen & Media (Animation & Visualisation)
Digital Artist	Advanced Diploma of Screen & Media (Animation & Visualisation)
Graphic Artist	Certificate IV in Programming
Multimedia specialists	
Game Developers	
IT Administrator	
IT Technician	
Systems Administrator	

Internet of Things, System Integration, Cloud Computing and Cyber Security

IT Technician	Certificate III in Information, Digital Media & Technology
ICT Support Specialist	Certificate III in Information, Digital Media & Technology (Network Administration)
Web Designer/Developers	Certificate III in Information, Digital Media & Technology (Web Technologies)
Website Coordinator	Certificate III in Information, Digital Media & Technology (Cyber Security)
ICT Business and Systems Analyst	Certificate IV in Cyber Security
ICT Managers	Certificate IV in Programming
Software and Application Programmers	Certificate IV in Information Technology Networking
Software Engineers	Diploma of Information Technology Networking
ICT Security Specialists	Advanced Diploma of Network Security (Cyber Security)
Systems Administrators	Diploma of Software Development
Electronics Technician	Certificate II in Integrated Technologies (Robotics Control Systems)
Electronics and Communications Technician	Certificate III in Electronics & Communications
	Certificate IV in Electronics & Communications

Robotics

Systems Administrators	Certificate II Integrated Technologies (Robotics Control Systems)
Electronics Technician	Certificate IV in Integrated Technologies (Robotics Control Systems)
Installation Technician	Certificate II in Electronics
Electronics and Communications Technician	Certificate III in Electronics & Communications
Electronic Engineers	Certificate IV in Electronics & Communications
ICT System Analyst	Certificate IV in Electrical - Instrumentation
Engineering Associate	Certificate II in Engineering Pathways
	Certificate IV in Programming

Big Data

Assistant Programmer	Certificate IV in Programming
Support Programmer	Diploma of Software Development
Analyst	
Programmer	
IT Admin	
Digital Programmer	
Business Programmer	
Software Developer	
Applications Support	
Software Applications Specialist	
Mobile and Desktop Applications Developer	
Games Programmer	

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Renewable Energy

Electrical Tradesperson
Meter Installer
Electronics Technician
Electronic Engineers
Engineering Draftsperson
Drafter
Junior Project Supervisor
Engineering Associate
Technical Officer (Spatial Information Services)
Senior Technical Officer
Surveying Assistant
Surveyor (Mining | Engineering | Construction)
Life Science Technician
Environmental Technician
Natural Resource Management Officer

Certificate II in Electrotechnology (Career Start) (Electrotechnology Pre-app)
Certificate III in Electrotechnology Electrician
Certificate III in Electrical Fitting
Certificate II in Integrated Technologies (Robotics Control Systems)
Certificate III in Engineering (Technical)
Certificate IV in Engineering (Computer Numerical Control)
Diploma of Engineering Technical (Mechanical)
Certificate III in Surveying & Spatial Information Services
Certificate IV in Surveying
Diploma of Surveying
Advanced Diploma of Surveying
Diploma of Environmental Monitoring & Technology

Other Technology

Fitter-Welder
Fitter and Turner
Metal Machinist
Welder
Engineering Draftsperson and Technicians
Metal Template Maker
Structural Steel Trades Worker
Pressure Welder
Light Metal Fabrication Tradesperson
1st Class Sheet Metal Worker
Higher Engineering Tradesperson or a Special Class
Engineering Tradesperson
Fluid Power Technician
Hydraulic Technician
Data and Voice Communications Cabler
Sales and Testing of Electronic Communications Equipment
Security Cabler
Security Installation Assistant

Engineering Technology

Certificate III in Automotive Electrical Technology
Certificate II in Computer Assembly & Repair
Certificate II in Engineering (Mechanical Fitter and Machinist Pre-Apps)
Certificate III in Engineering - Mechanical Trade (Fitter & Machinist ZB)
Certificate III in Engineering - Mechanical Trade (Mechanical Fitter ZA)
Certificate III in Engineering - Fabrication Trade (Light YC)
Certificate III in Engineering - Fabrication Trade (Heavy/Welding YH)
Certificate IV in Engineering (Fluid Power)

Electrical Technology

Certificate II in Data & Voice Communications
Certificate II in Security Assembly & Set-Up

Science-based Technology

Certificate III in Laboratory Skills
Certificate IV in Laboratory Techniques

Other Indirectly Related Qualifications (Non-Technical)

Project Management Officer
Project Coordinator
Project Leader | Project Team Leader
Project Manager (industry specific)
Business Manager
Manager Production
Manager Operations
Manager Public Sector
Corporate Services Manager
Project Manager

Certificate IV in Project Management Practice
Certificate IV of Leadership & Management
Diploma of Leadership & Management

We look forward to partnering with industry to deliver innovative, cost-effective training solutions for your business.