# LEVEL 5 DIPLOMA IN MECHANICAL TECHNOLOGY

## Recognized NQC UAE National Qualification; Code: ENG05002NQ17 Program Description

The Mechanical Technology program aims to provide learners with the knowledge, skills and competencies to equip them with practical knowledge and an understanding   of the boundaries in the field of mechanical engineering technology.

## Program Learning Outcomes

Upon successful completion of this program, the graduates will be able to:

1. Apply knowledge, repair/troubleshooting techniques, metal working skills and modern tools of mathematics, science,  engineering, and technology to solve technically and practically defined engineering problems appropriate to the discipline.
2. Work with Engineering and Product Service to identify root causes and solve external quality issues
3. Have a functional knowledge of mechanical components (valves, pipe fittings, bearings, motors, gearboxes, etc.).
4. Have knowledge of Microsoft Word, Excel, job related internet  research and Maintenance software for daily usage.
5. Accomplish goals while maintaining high team morale, employee involvement, safety and teamwork

## Occupation and Industry Sector

# Requirements

## Completion Requirements

Students seeking the Level 5 Diploma in Mechanical Technology qualification must
successfully complete 91 credits, including:

| Code | Title | Credit Hours |
|---|---|---|
| Mandatory core unit credits | | 16 |
| Mechanical stream course credits (level 4) | | 7 |
| Mechanical stream course credits (level 5) | | 33 |
| Mechanical optional credits (level 4) | | 7 |
| Mechanical optional credits (level 5) | | 28 |
| Total Credits | | 91 |

## Course Requirements

| Code | Title | Credit Hours |
|---|---|---|
| **Mandatory core courses** | | |
| Required credits: 16 | | |
| MCT 200 | Interpret and document technical information | 2 |
| MCT 201 | Apply engineering technology to real or simulated situations to produce technical solutions | 4 |
| MCT 230 | Perform practical training and support in electromechanical based industries | 10 |
| **Mechanical stream courses** | | |

| | | |
|---|---|---|
| Required credits : 40 | | |
| MCT 100 | Perform basic machining | 4 |
| MCT 110 | Interpret and Prepare Technical Drawings | 3 |
| MCT 102 | Discover Fluid Mechanics | 2 |
| ECT 124 | Write programs using C++ | 3 |
| MCT 122 | Analyse Static Loads | 3 |
| MCT 124 | Explore heat transfer and thermodynamics | 4 |
| MCT 125 | Perform CAD CAM | 4 |
| MCT 220 | Produce CAD technical drawings | 2 |
| MCT 123 | Describe the fundamentals of material science | 4 |
| MCT 221 | Explore the knowledge and skills of codes and standards in mechanical engineering | 2 |
| MCT 120 | Solve problems in work and energy | 5 |
| MCT 222 | Explore the fundamentals of mechatronic electromechanical drives | 4 |
| **Optional courses** | | |
| Required credits : 35 | | |
| GED 100 | Develop English language skills | 3 |
| MCT 101 | Perform basic mechanical maintenance | 4 |
| HSE 100 | Explore Health, Safety and Environment at Workplace | 2 |
| MAT 210 | Apply fundamental concepts and skills in algebra, geometry, and trigonometry | 4 |
| MCT 210 | Prepare CAD environment, create 2D-3D drawings and understand manufacturing automation | 4 |
| MCT 212 | Explore the basics of pneumatic and hydraulic Systems | 4 |
| MCT 111 | Select instruments and sensors for measurement | 3 |
| MCT 211 | Explore knowledge and skills of pumps and compressors | 2 |
| MCT 213 | Operate and Maintain Computer Numerical Control (CNC) machines | 2 |
| MCT 214 | Explore 3D printing technologies in engineering | 2 |
| MCT 216 | Develop knowledge of work organization and management | 2 |
| ECT 225 | Demonstrate AC and DC principles in electronic circuits | 3 |

| Description | Data |
|---|---|
| Total Required Credits | 91 |
| Program Code | DPMCT |
| Major Code | MCT |

# Ideal Study Plan
# Recommended Sequence of Study
## Level 5 Diploma in Mechanical Technology

Year 1

| Semester 1 | | Credit Hours |
|---|---|---|
| GED 100 | Develop English language skills | 3 |
| MCT 110 | Interpret and Prepare Technical Drawings | 3 |
| MCT 100 | Perform basic machining | 4 |
| MCT 101 | Perform basic mechanical maintenance | 4 |
| HSE 100 | Explore Health, Safety and Environment at Workplace | 2 |

| | | |
|---|---|---|
| MCT 102 | Discover Fluid Mechanics | 2 |
| | **Credit Hours** | **18** |
| **Semester 2** | | |
| MAT 210 | Apply fundamental concepts and skills in algebra, geometry, and trigonometry | 4 |
| MCT 210 | Prepare CAD environment, create 2D-3D drawings and understand manufacturing automation | 4 |
| ECT 124 | Write programs using C++ | 3 |
| MCT 122 | Analyse Static Loads | 3 |
| MCT 212 | Explore the basics of pneumatic and hydraulic Systems | 4 |
| MCT 124 | Explore heat transfer and thermodynamics | 4 |
| | **Credit Hours** | **22** |
| **Year 2** | | |
| **Semester 3** | | |
| MCT 125 | Perform CAD CAM | 4 |
| MCT 111 | Select instruments and sensors for measurement | 3 |
| MCT 220 | Produce CAD technical drawings | 2 |
| MCT 123 | Describe the fundamentals of material science | 4 |
| MCT 221 | Explore the knowledge and skills of codes and standards in mechanical engineering | 2 |
| MCT 211 | Explore knowledge and skills of pumps and compressors | 2 |
| MCT 200 | Interpret and document technical information | 2 |
| MCT 213 | Operate and Maintain Computer Numerical Control (CNC) machines | 2 |
| MCT 214 | Explore 3D printing technologies in engineering | 2 |
| | **Credit Hours** | **23** |
| **Semester 4** | | |
| MCT 120 | Solve problems in work and energy | 5 |
| MCT 216 | Develop knowledge of work organization and management | 2 |
| MCT 230 | Perform practical training and support in electromechanical based industries | 10 |
| MCT 201 | Apply engineering technology to real or simulated situations to produce technical solutions | 4 |
| MCT 222 | Explore the fundamentals of mechatronic electromechanical drives | 4 |
| ECT 225 | Demonstrate AC and DC principles in electronic circuits | 3 |
| | **Credit Hours** | **28** |
| | **Total Credit Hours** | **91** |