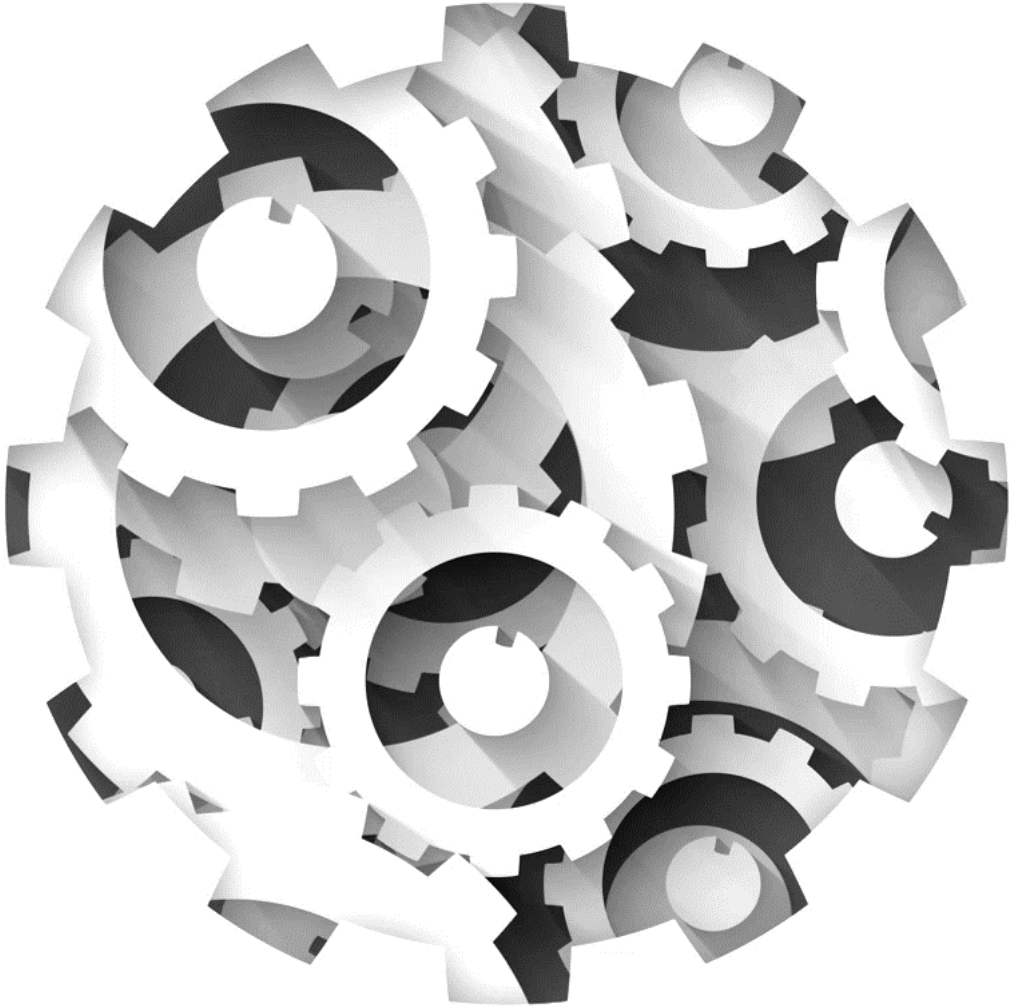


Careers in Engineering

Dr. Ing. Bonnie Attard

President, Chamber of Engineers

Chamber of Engineers

Founded 1978

Voluntary organisation

Advisory, social and educational services

Interests of engineering professionals locally

Example of some engineering roles

Systems and Control

Materials

Electronics

Artificial Intelligence

Design

Computer

Quality Assurance

Telecommunications

Power

Manufacturing

Mechanical behaviour

Creating useful things

Understanding how things work

Problem solving

“But what does an *engineer* do?”

Designing new things

Making things work better

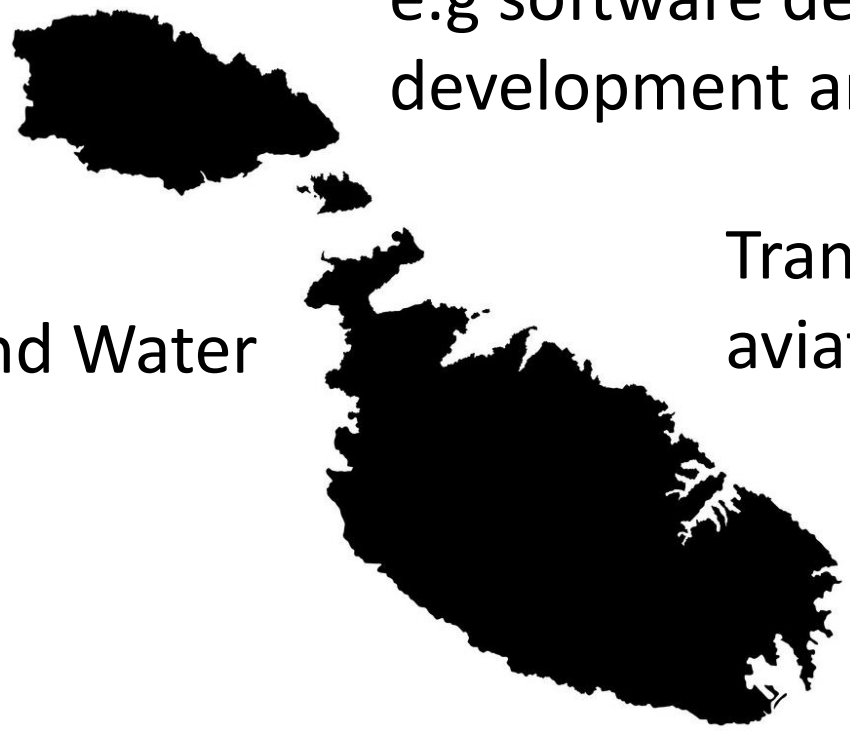
Helping people

Where do engineers work?

Entrepreneurship

ICT companies
e.g software development, digital development and iGaming

Telecommunications



Transport e.g. maritime, aviation and land transport

Energy and Water

Manufacturing
e.g. electronics, pharmaceuticals, medical devices

Public sector

Healthcare solutions and systems

Construction and infrastructure

Consulting services

Where do engineers work?

~~Only employable in Malta~~

NAVIGATING A CAREER IN ENGINEERING DESIGN

Enjoying everything that has to do with the seaside, is what Ghadira has meant to me since I was a kid. There, I spent my summers associating my interest in engineering and the environment with all things that float, be it some boat restoration idea, an inconclusive invention, or a fascination with getting a marine craft redesigned from scratch. One thought soon became clear, I wanted to follow a career path that would involve design and keep me close to the sea.

ENGINEERING: SOLVING PROBLEMS ACROSS DIFFERENT DOMAINS

THE STORY OF DR NATHALIE CAUCHI

From a young age, I was captivated by understanding how things work, interact and evolve. I was the kid disassembling electronics I find around mum's house and solving mathematical questions as a side hobby. Through engineering I found my niche, allowing me to bridge the gap between abstract thinking and real-world constraints. It fosters collaboration with individuals from diverse backgrounds and perspectives.

My academic and industrial journey began at the University of Malta, where I delved into multiple facets of engineering, from signal processing, electronics, and control theory to computer science. This exposure piqued my curiosity and equipped me with the tools to understand complex systems. My undergrad thesis focused on building an end-of-line pH meter tester for a pH probe manufacturer. This challenge involved designing a circuit to measure the minute electrical signal generated between two glass nodes within the pH probe when dipped into acidic and alkaline solutions. Ensuring the accuracy of these readings required a multilayer PCB with proper shielding and precise placement of digital and analogue signals. Despite moments of

I wanted to learn more about how I could combine these two fields to real world applications.

After a few months of research, and the encouraging words of Dr. Ing. Mark Anthony Azzopardi, from the University of Malta, I found Prof. Alessandro Abate at the University of Oxford. In his work, he combines classical

Engineers beyond our shores

A JOURNEY IN ENGINEERING, AI, AND BEYOND

THE STORY OF DR MICHAELA TROMANS-JONES

My passion for technology, creativity, and problem-solving began early. Initially drawn to architecture due to my love for art and design, I ultimately found my path in engineering. Over the years, my work has spanned biomedical research, artificial intelligence (AI), and machine learning, applying these technologies across healthcare, food technology, and gaming analytics. Adaptability and continuous learning have been central to my journey, enabling me to contribute to cutting-edge machine learning solutions and foster digital communities - all while ensuring that my work aligns with my family life.

Introduction

My name is Michaela Spiteri (according to my father), or Tromans-Jones according to my marriage certificate. I am a mother of three living in the south of Spain, just a short drive from Marbella or Gibraltar. My interests include baking, CrossFit (to burn off the calories from baked goods), reading (when my children sleep on time), binge-watching "Bridgerton", and Artificial Intelligence.

As a mother of three, I have shaped my career to fit my life, not the other way around. Living far from any industrial hubs, I work remotely, currently part-time until my youngest starts nursery. My career has always been designed to support my family, allowing me to balance professional growth with personal priorities.

Early Education: Finding My Path

After achieving strong GCSE results, particularly in Mathematics, I faced uncertainty about my next steps. I pursued A-levels in Mathematics and Physics, initially considering architecture. The transition from a small Catholic school to a large sixth-form college was overwhelming, and I struggled to stay motivated. I frequently contemplated dropping out of sixth form to pursue other careers, such as hairdressing or interior design (more artistic career choices). However, with the support of my parents — who invested in extra books, lessons, and tutoring, I persevered.

Beyond academics, I always thoroughly enjoyed getting involved in extracurricular activities, shaping a mindset that would later guide my career. I realised

that a well-rounded education and social life, was just as valuable as technical expertise, not only in terms of pursuing a successful career but also with the aim of living life to the fullest.

Pursuing Engineering and Overcoming Challenges

In 2008, I enrolled in the University of Malta's Electrical and Electronic Engineering course, drawn to the Systems and Control Engineering Department

Skills to become an Engineer

- Problem Solving
- Eager to learn
- Analytical
- Aptitude for Design/Creative
- Curiosity
- Interested in Technology







Engineering Experiences

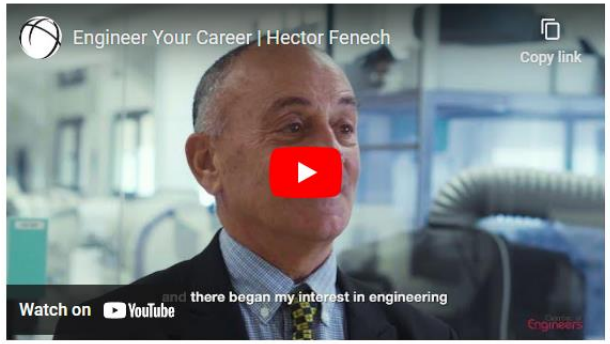
Engineering Experiences

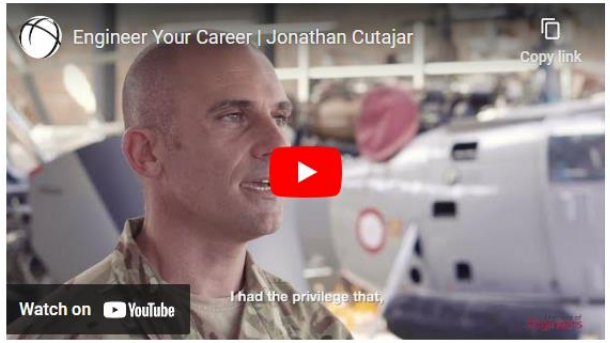
Curious?

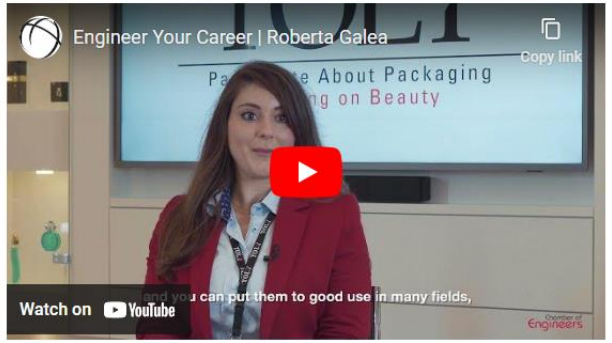
Several videos are available at: https://www.coe.org.mt/engineer-your-career/

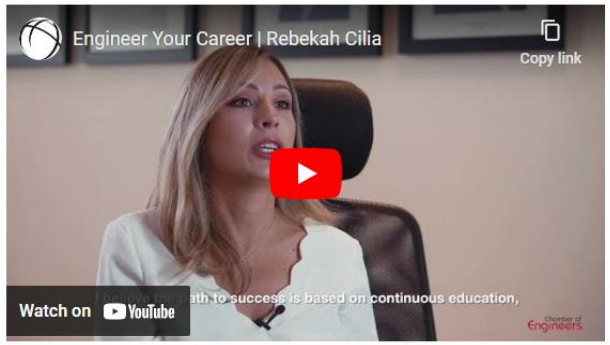
Featuring engineering professionals speaking about their career and experiences.

CoE is happy to help – get in touch with us!









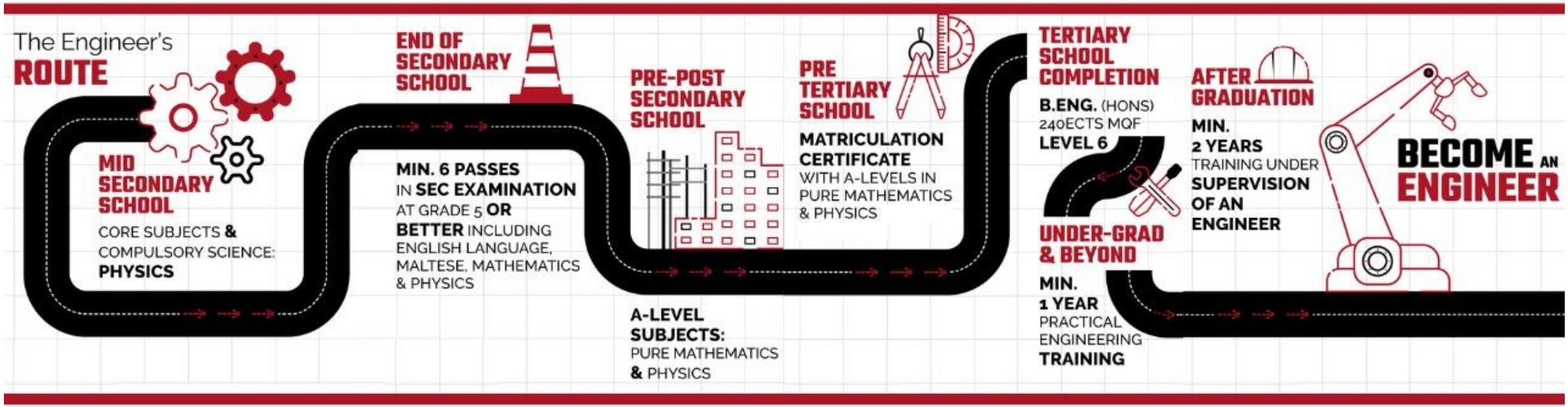
Malta Council for the VOLUNTARY SECTOR

Chamber of Engineers

VOP SCHEME

PARLIAMENTARY SECRETARY FOR YOUTH, SPORT AND VOLUNTARY ORGANISATIONS

Qualifications and Progression



Qualifications in Detail

Mid-secondary school

Core subjects
Science subject: Physics

End of secondary school

Minimum of 6 passes in SEC examination at grade 5 or better including English Language, Maltese, Maths and Physics

Pre-Post Secondary School

A-Level subjects in:
1. Pure Mathematics
2. Physics

Matriculation Certificate with A levels in Pure Mathematics and Physics

A-Level requirements

University of Malta:
Passes in grade C or better in Pure Maths and Physics for Engineering.
Pass grade C in Pure Maths and another subject and Intermediate in Physics for Computer Engineering.

MCAST:
Grade C on average in Maths (Pure or Applied) and Physics.

Bachelor in Engineering (Hons.) 240 ECTS MQF Level 6

University of Malta

- B.Eng. (Hons.) Electrical and Electronic Engineering
- B.Eng. (Hons.) Mechanical Engineering
- B. Sc (Hons. Computer Engineering) (180 ECTS) + Masters

MCAST

- B.Eng. (Hons.) Electronics Engineering
- B.Eng. (Hons.) Mechanical Engineering

Other Routes

University of Malta

Certificate in Engineering Sciences
MQF Level 4, 60 ECTS
(1 year)

Entry requirements:
1 science subject at A-level OR MQF level 4 in engineering domain (pass with merit) + pass in sec certificate examination at minimum grade 5 in English, Maltese and Maths.
This satisfies entry requirements for the B. Eng. and B.Sc. Computer Engineering courses at UM.

MCAST

Diploma Level 4 courses in engineering domain, pass at 60% or higher (i.e. C average).

This satisfies entry requirements for the Certificate course at UM or the Level 6 B.Eng. (Hons.) courses at MCAST

MCAST

Diploma Level 5 courses (Undergraduate Diploma in Foundations of Engineering) + passes at SEC grade 5 or better in English Language, Maltese, Maths and Physics.

This satisfies entry requirements for the B. Eng. (Hons.) courses at UM (subject to an interview) and MCAST

Further information

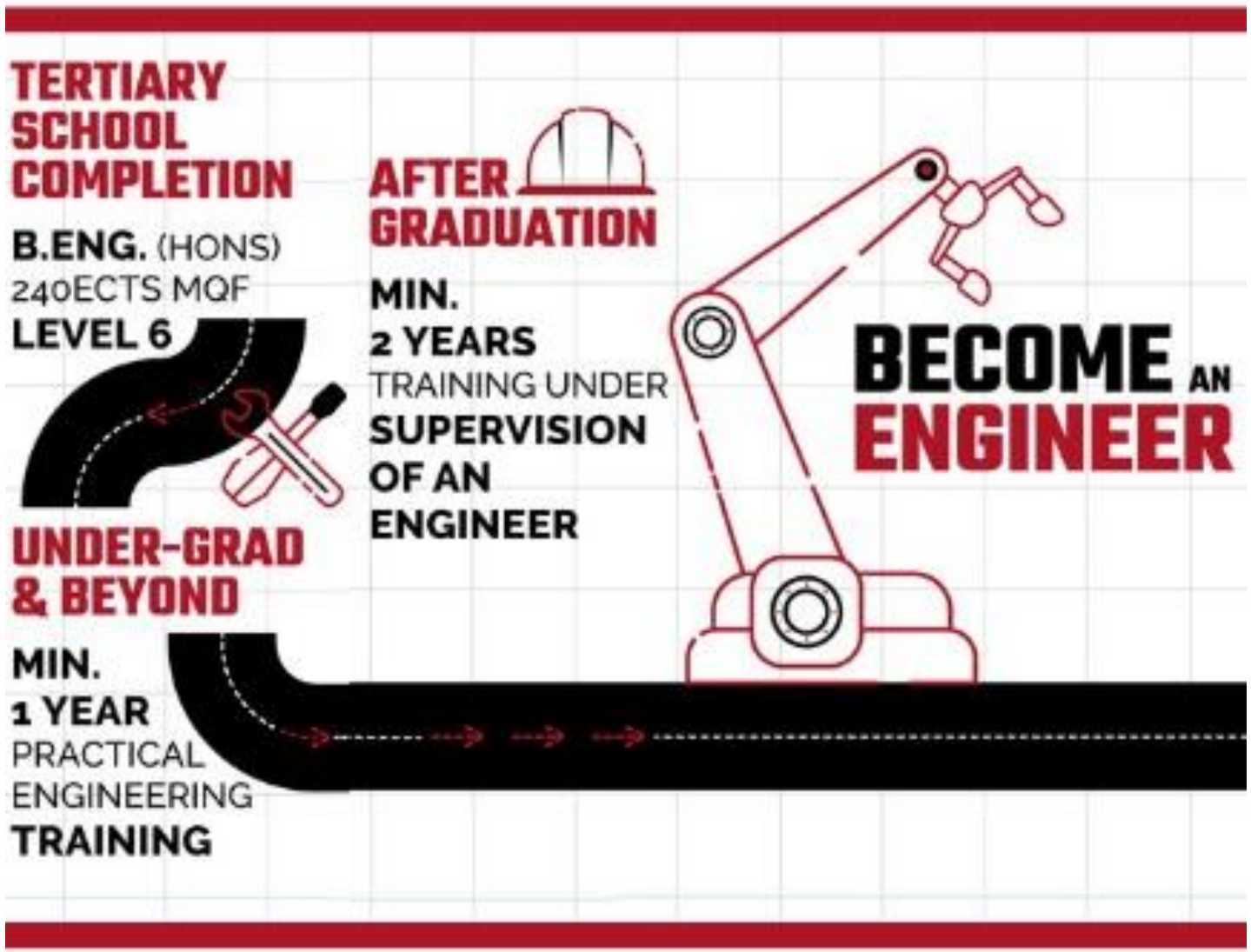
University of Malta Course overview and entry requirements:

Bachelor of Engineering (Honours) in Mechanical Engineering:
https://www.um.edu.mt/courses/overview/ubenghmecft-2024-5-o/
Bachelor of Engineering (Honours) in Electrical and Electronic Engineering:
https://www.um.edu.mt/courses/overview/ubengheleft-2024-5-o/
Certificate in Engineering Sciences:
https://www.um.edu.mt/courses/overview/ucensft-2024-5-o/

MCAST Course overview and entry requirements:

Electrical and Electronics Engineering:
https://mcast.edu.mt/electrical-and-electronics-engineering/
Mechanical Engineering:
https://mcast.edu.mt/mechanical-engineering/

What comes After?



Chamber of Engineers

Thank you for your attention

Questions?

www.coe.org.mt **Follow us on:** Facebook | LinkedIn | Instagram | Twitter