



# Supporting Rail in Scotland: Work Based Education & Apprenticeship Solutions

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# External Influencing Factors

Technology



Infrastructure

Market

Behaviour

Energy



Regulation

## PEOPLE

The Century of Human Capital



## Knowledge & Qualifications

Mechanical Engineering + Civil Engineering

Electrical & Electronic Engineering.

Engineering, Design Manufacture

AI, Data Science & Machine Learning

Digitisation: Industry 4.0

Software Development; Cyber Security

Quality Systems & Maintenance Management

Leading Projects & Leading Teams

## Converged Skills

Project Management, Problem Solving, Risk Management

Business Analytics, Monitoring & Measuring

Control & Instrumentation, Asset Management, Asset Security

Data Science: Data Driven Strategy Design, Innovation, Transformation & Risk Modelling.

Digitisation: IoT, Dev Ops, Cloud, Mobile, Cyber Security.

Leadership & Communication; Digital Platforms

Collaboration, multi-skilled teams, agility & flexibility

# How GCU thinks about Apprenticeship Opportunities

## Large Employers

Scale of opportunity through strategic engagement that unlocks and enables the knowledge, skills and talent in large scale employer workforces

## Skills Shortages

Tackling Skills and labour shortages that are a barrier to growth in business and at national economic level.

## High Tech SME's

Collaboration around innovation, technology and skills.



Thinking and planning for impact

## Economic partnership

Working in economic partnerships to take current economic clusters from good to great: City Deals / Regions + Local Economic Development Plans

## Major Projects

Infrastructure, Transport, Connectivity, Health, Data, Public Private partnerships

## Levelling Up & Innovation Acceleration

Investment Zones, Freeports, Key Sectors and Regional Clusters

## The key to success in all segments

Skilled workforce and access to sector and professional body aligned education.

# A Sample of GCU's Employer Client Portfolio for Work Based Education



# A Fifteen Year Partnership to Support the Railway Operations Management Profession





# Graduate Apprenticeship Programmes at GCU:

- [BEng \(Hons\) Graduate Apprenticeship Engineering Design and Manufacture](#)
- [BSc \(Hons\) Graduate Apprenticeship Construction and the Built Environment \(Quantity Surveying\)](#)
- [BEng \(Hons\) Graduate Apprenticeship Environmental and Civil Engineering \(Civil Engineering\)](#)
- [BSc \(Hons\) Graduate Apprenticeship AI and Data Science](#)
- [BSc \(Hons\) Graduate Apprenticeship Software Development](#)
- [BSc \(Hons\) Graduate Apprenticeship Cyber Security](#)
- [MSc Graduate Apprenticeship Cyber Security](#)
- [BA \(Hons\) Graduate Apprenticeship Business Management](#)
- [MAcc Graduate Apprenticeship Masters in Accountancy](#)

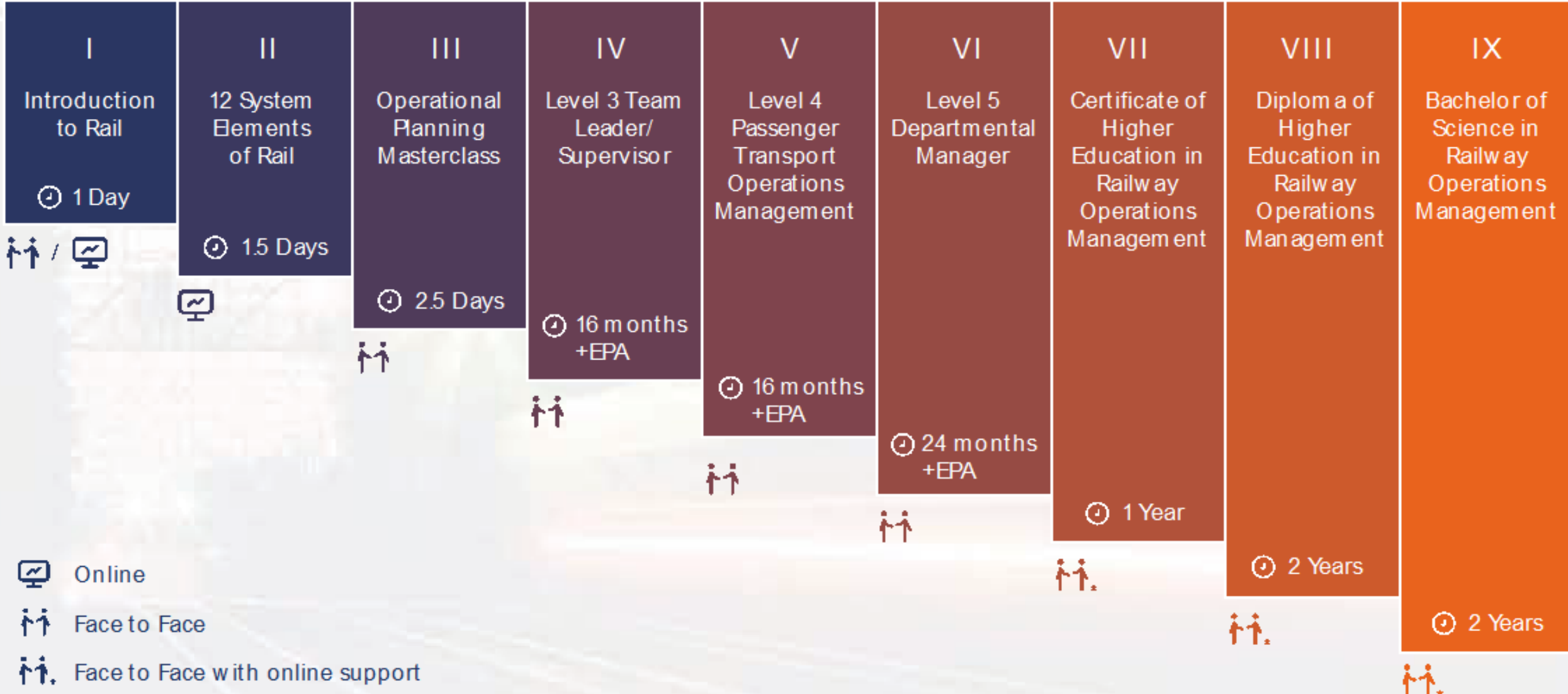


# STUDY OPTIONS

## RAIL ACADEMY

## APPRENTICESHIPS

## ACADEMIC



- Online
- Face to Face
- Face to Face with online support

# Example Transnet Freight Rail Masters Work Based Projects

- Possible Benefits of deploying longer trains through optimisation in the Maputo corridor
- Critical evaluation of cash flow forecasting methodologies and process at Transnet Freight Rail
- Utilising virtual (VR) for practical assessment for train drivers in Kaserne depot.
- Evaluating options for a public private partnership model in South Africa heavy haul rail operations
- Exploring the use of global navigation satellite systems for the safe movement and control of trains in South Africa.
- To investigate Communication Based Train Control (CBTC) system as a mechanism to improve railway line capacity on the central corridor
- Evaluating the effectiveness of the current implementation and execution strategy to supply jet fuel to O.R. Tambo International Airport considering future investment.
- The introducing of double stacking of containers on rail between Belville container terminal and the port of Table Bay, in order to improve customer satisfaction.



# Thank you

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