

How to find the Discover pages



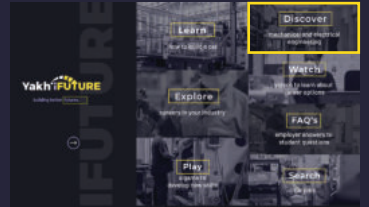
STEP 1

Connect to the internet on your phone or computer.



STEP 2

Scan the QR code or visit the URL link below www.yakhifuture.org.za

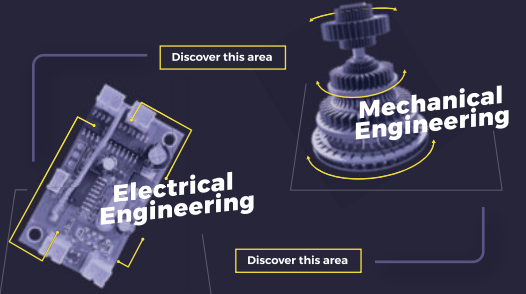


STEP 3

Select the Discover button on the landing page of the website.

STEP 4

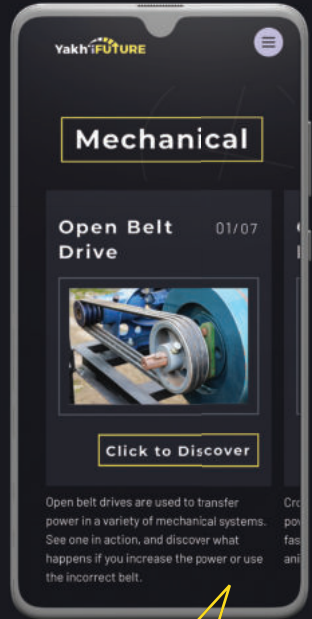
Choose Electrical or Mechanical Engineering. Click the Discover This Area button to interact with the learning material.



DISCOVER

Mechanical Engineering

Focuses on the principles of electricity to study, design, develop, test and maintain systems which use electricity, electronics and electromagnetism. This includes components, devices and systems from microchips to power station generators.

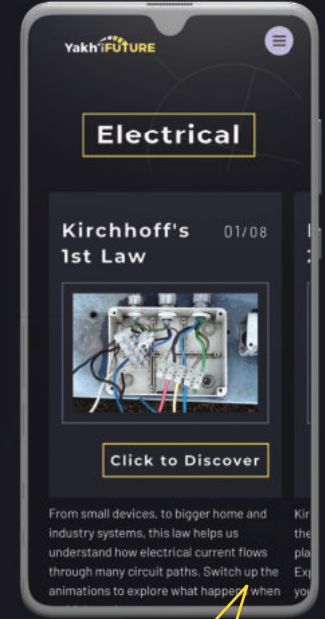


Scroll through the interactive content to play with the diagrams, gather information, and test yourself with practice questions.

DISCOVER

Electrical Engineering

Combines both physics and mathematical principles to research, analyse, design, develop, build, test and maintain a variety of mechanical systems, tools, engines and machines from almost any industry.



Scroll through the interactive content to play with the diagrams, gather information, and test yourself with practice questions.

Statics and Strength of Materials

TEST IT OUT
Tap the diagram for more information and click on the buttons to change a component and see what happens!

Static Equilibrium

Tensile Load

Compressive Load

Use the wrong material

EXAMPLE CALCULATIONS
In order to work with Statics and Strength of Materials, mechanical engineers need to understand and work with a variety of calculations, here are just a few:

Static Equilibrium:
 $\sum F = 0$

Hook's Law:
 $F = k \Delta L$

Young's Modulus (E):
 $E = \frac{F}{\Delta L} \times L$

Single Banding Equation:
 $\sigma = \frac{F}{A}$

Percent of inertia for Standard section:
 $I_x = \frac{bh^3}{12}$
 $I_y = \frac{hb^3}{12}$

PRACTICE QUESTIONS
Test your new knowledge on statics and strength by answering these questions.

1. Which is a body in a state of static equilibrium?
 When it's balanced.
 When all opposing forces have a resultant force of zero.

Half Wave Rectification

TEST IT OUT
Tap the diagram for more information and click on the buttons to change a component and see what happens!

Diode in Positive Direction

Diode in Negative Direction

Remove Diode

EXAMPLE CALCULATIONS
In order to work with Half Wave Rectification, electrical engineers need to understand and work with a variety of calculations, here are just a few:

Peak Voltage (Vp):
 $V_p = \sqrt{2} \times V_{RMS}$

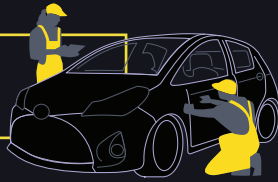
Average Output (Vavg):
 $V_{avg} = V_p \times 0.637$

RMS Voltage (VRMS):
 $V_{RMS} = \frac{V_p}{\sqrt{2}} = V_{avg}$

TABLES

Transformer	TI
Diode	DI
Load Resistance	RL

Hello...

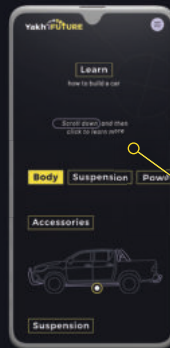


Welcome to Yakh'iFuture

Yakh'iFuture is a career platform connecting TVET students with insights on employable skills, job roles and engineering study concepts for future careers in the automotive components manufacturing field.

What to expect from the Discover pages on Yakh'iFuture

- Fundamental knowledge and formulas you need to know as a mechanical or electrical engineer.
- Engineering concepts put into action with interactive visuals.
- Practical questions to test your knowledge.



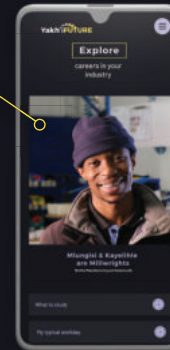
More to Discover Yakh'iFuture also offers

LEARN to build a car

This page shows you the components and systems that make up a typical vehicle. It also lists some of the artisans and tradespeople who manufacture them.

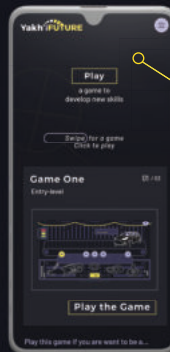
EXPLORE your new career

This page lets you explore different career paths in the SA's automotive components manufacturing industry and hear the experiences of real employees.



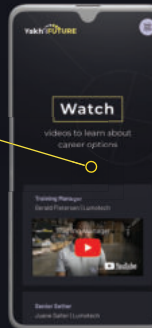
PLAY games to develop skills

Here, you'll be able to help you bring your TVET training to life through PLAY. These online games all focus on different aspects of skills development, building fundamental technical skills and life skills that today's employers need.



WATCH videos to learn more

This page collects all the videos and interviews together, sharing real stories from young people working in automotive manufacturing. You can learn first-hand what it's like to work their dream job.



FAQS

Here, automotive manufacturing employers answer students' most pressing professional questions, from what to study to how to shine in an interview.

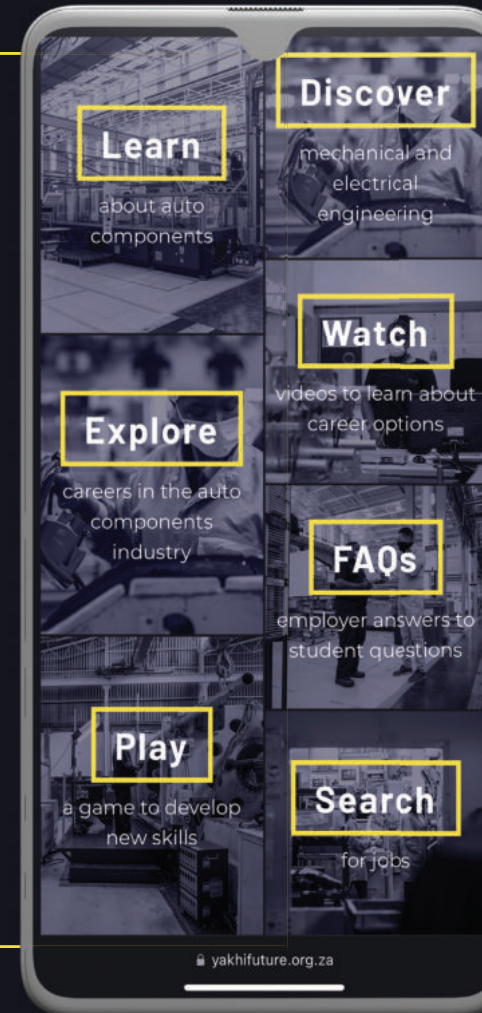
SEARCH

On the Search page, you can connect and register with SA Youth.mobi, South Africa's national network to find jobs, earn an income and grow more skills for free!

Yakh'iFUTURE

Discover Engineering Study Content on the Career Guidance Website

yakhifuture.org.za



yakhifuture.org.za

Funding Partners



Implementing Partner



Transforming lives, together.

National Partners

