Dear tshingombe,

Here is the copy of the Project Pitch with reference number : **00100839** submitted to the **Energy**

**Technologies (EN)** on **4/10/2025**.

1. Submitter Email

tshingombefiston@gmail.com

2. Submitter First Name

tshingombe

3. Submitter Last Name

tshitadi

4. Submitter Phone Number

0725298946

5. Company Name

engineering

6. Company Zip Code

10300

7. Company State

AK

8. Company Website

htpps//:www.tshingombe.com

9. SBIR/STTR topic that best fits your projects technology area

Energy Technologies (EN)

Are you eligible and interested in being considered for the NSF Fast-Track program?

No

10. Is this Project Pitch for a technology or project concept that was previously submitted as a full

proposal by your company to the NSF SBIR/STTR Phase I Program – and was not awarded ?

No

11. Has your company received a prior NSF SBIR or STTR award?

No

12. Does your company currently have a full Phase I SBIR or STTR proposal under review at

NSF?

No

13. Briefly Describe the Technology Innovation?Prospect Student Alu Research 2 Assessement Thesisi Experimental ,

project carrer final,

by

fiston

editEdit

gearManage

timeHistory

Publication date

2025-04-05

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opensource

Language

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Item Size

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Identifier

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experimental\_202504

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plus-circle Add ReviewReviews

14. Briefly Describe the Technical Objectives and Challenges?Curriculum assessment assessment

Name : tshingombe tshitadi fiston

Content:

Table of Contents

Curriculum assessment assessment

Name : tshingombe tshitadi fiston

1.1

Thesis. Degree honor, council quality rules low become justice

development court and labor relations conciliation mediation,

Engineering electrical trade research policy skill ,safety security

order develop ,defense order

2.1 Thesis. Degree honor, council quality rules low become justice

development court and labour relations conciliation mediation,

Engineering electrical trade research policy skill ,safety security

order develop ,defense order

Thesis. Degree honour, council quality rules low become justice

development court and labour relations counciliation mediation,

Engineering electrical trade research policy skill ,safety security

order developm ,defense order

5.1 Examination project

Master's in Artificial General Intelligence and Social Sciences

Introduction to Artificial General Intelligence

AGI and Human Cognition

Ethical Considerations of AGI

AGI and Economic Implications

AGI in Public Policy and Governance

Social Impact of AGI

tshingombe tshitadi

Masters /engineering

About Me

Name

Follow Me On

My Education

Work Experience

Skills

Professional Skills

My Interests & Hobbies

Engineering electrical assessment career but sustainability

Some of my work & Certifications

Some Works

Thesis & Publications

AGI in Human-Machine Collaboration

Future Scenarios of AGI Development

4.1 .12.14,,

online Retail and E-commerce in the Renewable Energy Sector

Introduction to E-commerce in the Renewable Energy SectorUnderstanding the Renewable Energy Market

E-commerce Strategies for Renewable Energy Products

Consumer Behavior in Online Retail

Digital Marketing for Renewable Energy E-commerce

Sustainable Practices in E-commerce

Case Studies in Renewable Energy E-commerce

Regulatory Environment for Online Retail in Renewable Energy

Future Trends in Online Retail and Renewable Energy

Publishing and Natural Resources Management

Introduction to Sustainable Natural Resources Management

The Role of Publishing in Sustainability

Environmental Journalism and Communication

Digital Publishing and New Media

Content Creation for Natural Resource Management

Policy Advocacy and Public Engagement

Sustainable Practices in Publishing

Case Studies in Effective Sustainability Communication

Masters in Supply Chain Management and Traceability

Introduction to Supply Chain Management

Principles of Traceability

Software Engineering Basics

Supply Chain Digitalization

Data Management in Supply Chains

Blockchain for Supply Chain Traceability

IoT and Smart Supply Chains

Security and Privacy in Supply Chain Software

Case Studies and Real-world Applications

Social Media Marketing for Real Estate, Rental, and Leasing

Introduction to Social Media Marketing

Target Audience Analysis

Content Creation for Real Estate

Platform-Specific Strategies

15. Briefly Describe the Market Opportunity?

Cducation

Virtual Labs and Simulations

Assessing Learner Outcomes in Technology-Driven Curriculum

Case Studies in Renewable Energy Education

Challenges in Integrating Technology and Renewable Energy Education

Wholesale Trade Management in Industrial Engineering

Introduction to Wholesale Trade

Supply Chain Dynamics

Inventory Control Methods

Logistics and Distribution

Procurement Strategi

16. Briefly Describe the Company and Team?Hardware Configuration

4. Optimization of IoT-Enabled Electrical Systems

o Experiment: Configure Cisco IoT hardware for industrial automation and

monitor its impact on electrical system efficiency.

o Focus: Compare outcomes with traditional non-IoT systems.

5. Network Traffic Impact on Energy Consumption

o Experiment: Measure the correlation between network traffic and power

usage in Cisco networking hardware.

o Focus: Simulate high and low traffic conditions to evaluate energy

saving features.

6. Compatibility of Cisco Devices with Electrical Standards

o Experiment: Test Cisco hardware configurations against national and

international electrical engineering standards.

o Focus: Ensure compliance and reliability under diverse conditions.

Electrical System Integration

7. Smart Grid Performance with Cisco Hardware

o Experiment: Investigate the role of Cisco networking devices in

optimizing energy distribution within smart grids.

o Focus: Study how configurations improve fault detection and load

management.

8. Renewable Energy Integration

o Experiment: Configure Cisco hardware to monitor and control systems

with renewable energy sources like solar panels.

o Focus: Analyze the efficiency of hardware configurations in hybrid

energy setups.

o

17. How did you first hear about our program?

NSF email, webinar, or event

**NSF SBIR/STTR Phase I Eligibility Information:**

In addition to receiving an invitation to submit a full proposal from the NSF SBIR/STTR Phase I

Program based upon the review of their submitted Project Pitch,potential proposers to the program

must also qualify as a small business concern to participate in the program (see SBIR/STTR

Eligibility Guidefor more information).

The firm must be in compliance with the SBIR/STTR Policy Directive(s) and the Code of Federal

Regulations (13 CFR 121).

• Your company must be a small business (fewer than 500 employees) located in the United

States. Please note that the size limit of 500 employees includes affiliates.

• At least 50% of your company’s equity must be owned by U.S. citizens or permanent residents,

and all funded work needs

to take place in the United States (including work done by consultants

and contractors).

• Primary employment is defined as at least 51 percent employed by the small business. NSF

normally considers a full-time work week to be 40 hours and considers employment elsewhereof greater than 19.6 hours per week to be in conflict with this requirement.

• The Principal Investigator needs to commit to at least one month (173 hours) of effort to the

funded project, per six months of project duration.

*For more detailed information, please refer to the SBIR/STTR Eligibility Guide by using*

*https://www.sbir.gov/sites/default/files/elig\_size\_compliance\_guide.pdf. Please note that these*

*requirements need to be satisfied at the time an SBIR/STTR award is made, and not necessarily*

*when the proposal is submitted.*

*2.* Dear fiston,

Here is the copy of the Project Pitch with reference number : **00097898** submitted to the

**Advanced Systems for Scalable Analytics (AA)** on **2/3/2025**.

1. Submitter Email

tshingombefiston@gmail.com

2. Submitter First Name

fiston

3. Submitter Last Name

tshingombe

4. Submitter Phone Number

0725298946

5. Company Name

Engineering tshingombe

6. Company Zip Code

10300

7. Company State

AK

8. Company Website

https://tshingombe.com

9. SBIR/STTR topic that best fits your projects technology area

Advanced Systems for Scalable Analytics (AA)

Are you eligible and interested in being considered for the NSF Fast-Track program?

No

10. Is this Project Pitch for a technology or project concept that was previously submitted as a full

proposal by your company to the NSF SBIR/STTR Phase I Program – and was not awarded ?

No

11. Has your company received a prior NSF SBIR or STTR award?

No

12. Does your company currently have a full Phase I SBIR or STTR proposal under review at

NSF?

No

13. Briefly Describe the Technology Innovation?Education technology relate low manufacture thesis.low outcome framework

qualicafition.invrstisgation energie rurale framework meeting and no

meeting development system integration system plant imagine and real

system complex system energy . Educational regulation irregularite

system and regulation system .project integration time table

14. Briefly Describe the Technical Objectives and Challenges?

Technical challenges real industrial and imaginar system time table

education field artisant build to real African system in marketing

15. Briefly Describe the Market Opportunity?

Market system money .sale record implementating programmes design

imagined cost assessment in the time frame lost maintenance emergency

system

16. Briefly Describe the Company and Team?

Campagny team member organisation sub sector engineering system and

educator system career experience outcome career undertake job .

17. How did you first hear about our program?

University tech transfer, VPR, or other administrative office

**NSF SBIR/STTR Phase I Eligibility Information:**

In addition to receiving an invitation to submit a full proposal from the NSF SBIR/STTR Phase I

Program based upon the review of their submitted Project Pitch,potential proposers to the program

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• At least 50% of your company’s equity must be owned by U.S. citizens or permanent residents,

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*https://www.sbir.gov/sites/default/files/elig\_size\_compliance\_guide.pdf. Please note that these*

*requirements need to be satisfied at the time an SBIR/STTR award is made, and not necessarilywhen the proposal is submitted.* Dear fiston,

Here is the copy of the Project Pitch with reference number : **00098889** submitted to the **Energy**

**Technologies (EN)** on **2/25/2025**.

1. Submitter Email

tshingombefiston@gmail.com

2. Submitter First Name

fiston

3. Submitter Last Name

tshingombe

4. Submitter Phone Number

0725298946

5. Company Name

Engineering electrical tshingombe

6. Company Zip Code

10300

7. Company State

AR

8. Company Website

https://github.com/Kananga5/Curriculum-section-1-1.1-Thesis.-Degree

honor-council-quality-rules-low-become-ju

9. SBIR/STTR topic that best fits your projects technology area

Energy Technologies (EN)

Are you eligible and interested in being considered for the NSF Fast-Track program?

Yes

Please provide details of the NSF research funding relied upon to meet the eligibility

requirements, including: NSF research award number(s); the proposing company personnel

involved in each of the listed research awards and their roles in the research awards; and a brief

explanation of how the cited research funding relates to the proposed Fast-Track project. (up to

150 words) Thesis. Degree honor, council quality rules low become justice

development court and labor relations conciliation mediation,

Engineering electrical trade research policy skill ,safety security

order develop ,defense order

1 .1.1 \*Thesis:

\* Research policy

trade theory minimum : legislation skill development :

\*1.1.2Education technology,: Education engineering relate low

manufacture ..

Degree honorable ; college low labor justice ,

\* Low relate literature traditional African LTA practical low rules

African

Convert unite international relate low rules European American curent in

unity language culture African rules

Please provide details of the customer discovery training relied upon to meet the eligibility

conditions, including: a description of the customer discovery training program(s), with

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1 .1.1 \*Thesis:

\* Research policy

trade theory minimum : legislation skill development :

honorable member certificate transcript outcome award

\*overview : journal

\* Key :

\* Background:

\*1.1.2Education technology,: Education engineering relate low

manufacture ..

Degree honorable ; college low labor justice ,

\* Low relate literature traditional African LTA practical low rules

African

Convert unite international relate low rules European American curent in

unity language culture African rules

Low EIC, rules cebec rules ,UNESCO rules culture American culture NPA

,, accountability cultural science mathematics,Conte law USA ,UK

Australia ,national rules RSA sabs sans rules .

\*College and university low Engineering rules :

Registration of low rules low congre low rules master cpd continue

developing skill master degree ,diploma continue topics rules ,unity

translate in African traditional mathematics usuel and Scotland UK land

UK and African land low rules integration reintegration accountability

research recharge system education technologie education technical

career and vocational career trade training trainer facilitator

moderator low assessor

Please check the appropriate box below to indicate whether the proposing Fast-Track team will

be complete at the time of proposal submission. Yes

10. Is this Project Pitch for a technology or project concept that was previously submitted as a full

proposal by your company to the NSF SBIR/STTR Phase I Program – and was not awarded ?

Yes

Please provide the Proposal Number of the previously submitted full NSF SBIR/STTR Phase I

proposal ?

1234568

Have you contacted the associated NSF SBIR/STTR Program Officer, via email or phone, to

discuss this prior full proposal submission? 1..1 introduction : framework experimental nated ncv combination

Nated combination irregularity policy management system information

workbase experimental facilities moderator p

\*1.3.2..3 Overview career libraries ,mentor facilitator library research

method book .

Low congre library,

\*1.3.2..3.

3.1Key: about library research centre the mission of the low library of

congress is to provide authoritative legal research , reference and

instructions service and access to an resolved.

Established 1832 low library has a collection of over ,2,9 million

volumes spanning all systems and period of low and government all the .

\* The library of congress provides congress admnister the national

copyright system and manage the largest collection of book recording ,

photography maps ,16 years authority record .

\* Administration commercial ,low environment criminals low procedure

intelligence , property legal , .

\* Broken down research court record .

\* Grant proposal : non profit grant proposal date submission grant

submitted to asresss

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1.3.2..3.4.request for proposal :

4.1\* education technology ,and master engineering electrical a,

Education Technical career Engineering .

\*REP. |. Proposal | compagny

- 4.2 .project overview :

- 4.3 .project goals :

-4.4.scope of work :

-4.5 .current roadblocks and bariere.

- 4.6.evaluation metric and .

-4.7. submission requirements.

- project due |. Date. | Budget amount

-Contact : email.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.3.2..3..1.\*Overview: national skill fund ,,and national research

fund. Career proposal

-1.2\*dealine : local Engineering study in workplace jhb RSA. PretoriaMidrand. To

UK and USA ,10 December 2024.

-1.3\* time frame : 5 years ,,to 2 years

- 1.4\*limitations : principal career proposal career compte.

-1.5\* submission by : Aiu research and. ,dhet saqa.

-1.6\* instruction : pdf proposal and award policy (

PAPPGG),NSF..,,proposal certificate congre archive internet library

Award compagny. Aware ,,saqa aware ,dhet aware ,college aware.

-1.7.\* minimum budget : 40000.0000 total program officer budge except.

Google budge apple

- 1.8\* eligibility:

\* Requirements : as of application ,hold degree field engineer trainee,

provide award type .

- preparatoration :

1.10.Review faculty early development:. allocation note:.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

- |documents| require|requirements|NSf

-cover projet | yes | begin withcareer|N/a

-project summary| y|following | N/a

-project descript| y |. | N/a

-result from | yes |.

-budget and|

- facilitator.|

-senior person|

- bibliography.|

Card board

- supplemtaire.

- past doctoral.

- research.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.3.2..3.1.11. project description : .

1.11.1 proposal sect research :

1.11.2. rational :

1.11.3. preliminary :

1.11.4 .data appropriate :

1.11.5.literaire where appropriate :

1.11.6. hypothesis overall :

1.11.7. questions research :

1.11.8 .description propose education activity integration:

1.11.9. description team and experience and expertise argument lock.

1.11.10. research / Education relevant for your career trajectory goal..

1.11.11 . limitations : conting plans .

1.11.12 . Expected outcome .

1.11.13. Definition of project of scussful .

1.11.14 distribution / delivery time research .1.11.14. measure planned or possibility resulted ...

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11. Has your company received a prior NSF SBIR or STTR award?

No

12. Does your company currently have a full Phase I SBIR or STTR proposal under review at

NSF?

Yes

13. Briefly Describe the Technology Innovation?

evel disciplinary

1.2 .problem statement :

Implementating framework qualicafition system agreement statement over

stay system education technologie and technical vocational engineering

field in Engineering lecture and assessor conducted learner need to

print in time outcome information and quickly statement ..of review

marked and remarking

- purpose of study : research advanced field and research basic

essential field system rurale need to implementating in new system.

Energy of education technology era system council adoption low rules

statement college distance learning courses subject issue teacher

design framework and work framework with learner job. Team ..

1.3 .2 rational : idea logic approach methodic disciplinary hearing

duty system of institution vocational and system management system

information need resolved , idee job fractinel evidence low design

information management system instituts police no meeting equivalent

national exam and statement of result research out mark druip reason

additional information irregularity system need to make reason quotion

of job learner lecture agreement of same compensation insurance for

aware certificate compliance hr resource to recognise certain factor

idee no to monopolies education system but democratic liberalism of

certain factor in examination criterial of course private system

industrial..

-1.5 background to the study :

Ireviewed and over view system agreement continue framework attandance

rurale school college time table more less agreement system policy

academic organisation of national trade faculty and national framework

qualicafition system internal working base system need to quickly factor

policy dhet cat council award challenge policy college academic with

engineering system theory and combination factor need theory to be

agreed with internal14. Briefly Describe the Technical Objectives and Challenges?power Systems and Renewable Energy

Optimization of Microgrid Systems

oInvestigating AI-driven optimization for hybrid renewable microgrids.

oCase study on cost-benefit analysis of microgrids in remote areas.

Smart Grid and Energy Storage Technologies

oEnhancing demand response strategies using machine learning.

oOptimization of battery energy storage for grid stabilization.

Wireless Power Transmission

oDeveloping high-efficiency resonant inductive coupling systems.

oApplications of wireless power transfer in electric vehicles.

2. Control Systems and Automation

AI-Based Predictive Maintenance in Industrial Systems

oMachine learning for fault detection in power transformers.

oPredicting failures in rotating machinery using deep learning.

Advanced Robotics and Control Algorithms

oAdaptive control for autonomous robotic arms.

oPath optimization algorithms for multi-agent robotic systems.

IoT-Based Smart Home Automation

oImplementing AI-driven smart home systems for energy efficiency.

oSecure communication protocols for IoT-based automation.

3. Embedded Systems and Internet of Things (IoT)

Edge Computing for IoT Devices

oImplementing real-time AI inference in low-power embedded systems.

oOptimization of edge computing frameworks for industrial IoT.

Wearable Health Monitoring Devices

oDeveloping ECG monitoring using flexible sensors and AI analysis.

Low-power IoT solutions for real-time health monitoringomakers to create

a robust, effective vocational education system

: Framework for Vocational Education with a Focus on NATED and NCV

Integration in South African Colleges

This topic can explore the integration and implementation of frameworks

for vocational education, particularly the National Diploma (NATED) and

National Certificate (NCV) qualifications within South African colleges.

The research would focus on how these systems can be effectively

combined to address challenges in vocational education, experimental

facilities, policy irregularities, and workplace-based learning.

Introduction to the Framework for Vocational Education

Overview of NATED and NCV

oThe National Diploma (NATED) and National Certificate (NCV) are the two

key qualifications within South African vocational education, designed

to enhance the employability of students.

oThe NATED qualification offers a more academic-based approach, while

the NCV focuses on practical skills training aligned with specific

trades.

Objective of Combining NATED and NCVoObjective: Explore how combining the NATED (academic) and NCV

(practical) systems can provide a more comprehensive, holistic

vocational education model.

oGoal: Enhance industry readiness and workplace skills by addressing

policy inconsistencies, improving management systems, and ensuring

strong work-based learning components

. Experimental Framework and Integration

Experimental Approach:

oIntroduce experimental frameworks to ensure both theoretical knowledge

and practical skills are addressed.

oImplement real-world case studies, hands-on training, and industry

feedback mechanisms to ensure the combination of theoretical and

practical education is balanced.

Curriculum Structure:

oDesign curriculum modules that address both theoretical coursework

(NATED) and practical skills (NCV).

oProvide a blended learning approach that mixes online learning,

classroom lectures, and workplace training.

15. Briefly Describe the Market Opportunity?

Project Description (Research Proposal Structure)Project Description

(Research Proposal Structure)

1.1 Proposal Section Research

Objective: This section should outline the primary aim of your research.

It should highlight the problem you aim to solve or the gap in knowledge

that your research will address.

oExample: "This research will explore the integration of machine

learning in electrical power systems to improve efficiency in load

shedding management."

1.2 Rationale

Why this research is important: Justify why the research is valuable,

its social, economic, or scientific impact. Provide insight into the

relevance of the study in your field.

oExample: "The study will provide solutions to the critical issue of

power supply reliability in developing countries, where load shedding

impacts industrial productivity."

1.3 Preliminary Research

Literature Review: Highlight key findings from previous studies in your

field. This shows what existing research is available and where your

work fits within it.

oMention gaps, contradictions, or opportunities that your research will

address.

16. Briefly Describe the Company and Team?1.8 Proposed Educational Activity Integration

How this research integrates with education: Discuss how this project

can be used in educational settings, either through curriculum

development, workshops, or by providing a learning opportunity for

students.

oExample: "This research will integrate a training module for

engineering students to learn about AI applications in power systems,

preparing them for the evolving energy sector."

1.9 Team Description and Expertise

Research Team: Outline the qualifications, experience, and expertise of

the people working on the project.

oExample: "The team will consist of Prof. X, an expert in machine

learning, and Dr. Y, an electrical engineer specializing in power

systems optimization."

1.10 Research/Education Relevance for Career Trajectory

Link to Career Goals: Explain how this research fits into your personal

career aspirations. Highlight how it will improve your expertise and

future opportunities.

oExample: "This project will enhance my career by providing cutting-edge

expertise in both electrical engineering and AI-driven solutions,

positioning me as a leader in smart grid technologies."

1.11 Limitations: Contingency Plans

What limitations exist in your study and how you plan to address them.

This could be data access issues, technological barriers, or budget

constraints.

oExample: "A limitation of the study is the potential lack of data

availability for certain regions. In case this occurs, we will

collaborate with local utilities to gather primary data."

1.12 Expected Outcome

What you hope to achieve: Outline the expected results and the impact

these could have in your field.

oExample: "W

17. How did you first hear about our program?

University tech transfer, VPR, or other administrative office

**NSF SBIR/STTR Phase I Eligibility Information:**

In addition to receiving an invitation to submit a full proposal from the NSF SBIR/STTR Phase I

Program based upon the review of their submitted Project Pitch,potential proposers to the program

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*https://www.sbir.gov/sites/default/files/elig\_size\_compliance\_guide.pdf. Please note that these*

*requirements need to be satisfied at the time an SBIR/STTR award is made, and not necessarily*

*when the proposal is submitted.*

*4.* Dear tshingombe,

Here is the copy of the Project Pitch with reference number : **00095759** submitted to the

**Advanced Manufacturing (M)** on **12/18/2024**.

1. Submitter Email

tshingombefiston@gmail.com

2. Submitter First Name

tshingombe

3. Submitter Last Name

tshitadi

4. Submitter Phone Number

0725298946

5. Company Name

Engineering electrical tshingombe

6. Company Zip Code

10300

7. Company State

AK

8. Company Website

htpps//:www.tshingimbefiston.com

9. SBIR/STTR topic that best fits your projects technology area

Advanced Manufacturing (M)

Are you eligible and interested in being considered for the NSF Fast-Track program?

Yes

Please provide details of the NSF research funding relied upon to meet the eligibility

requirements, including: NSF research award number(s); the proposing company personnel

involved in each of the listed research awards and their roles in the research awards; and a brief

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150 words)

Engineering electrical master skill ,manufacture

Please provide details of the customer discovery training relied upon to meet the eligibility

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customer discovery findings. (Up to 250 words) Engineering electrical manucture electrotech

Please check the appropriate box below to indicate whether the proposing Fast-Track team will

be complete at the time of proposal submission.

Yes

10. Is this Project Pitch for a technology or project concept that was previously submitted as a full

proposal by your company to the NSF SBIR/STTR Phase I Program – and was not awarded ?

Yes

Please provide the Proposal Number of the previously submitted full NSF SBIR/STTR Phase I

proposal ?

1234567

Have you contacted the associated NSF SBIR/STTR Program Officer, via email or phone, to

discuss this prior full proposal submission?

Engineering electrical

11. Has your company received a prior NSF SBIR or STTR award?

Yes

Please provide the Proposal Number of the previously submitted full NSF SBIR/STTR Phase I

proposal ?

1234567

12. Does your company currently have a full Phase I SBIR or STTR proposal under review at

NSF?

Yes

13. Briefly Describe the Technology Innovation?engineering electrical- Proposal of thesis content / final project

Content

1 .name of thesis

2.index

3. Introduction.

4.description .

5.general.analizing

6.current information .

7.discussion

8 conclusion.

9. Bibliography.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.Name of thesis : implementation and framework national qualification

and national trade examination circulum experimental job theoretical

pratical college and government policy LMS in engineering studies

science electrical businesses module: case studies rsa in dhet,saqa ,

St peace college

2. Index: topic achieve research advance field basic field , essential

filling research circulum, fundation intermediate,elementaire

3.Introduction : the core and research advanced field experience of

sciences engineering electrical study and implement programme in social

education and industrial trade vocational career productu sector in

energy electrical and science engineering field system need to learn and

re implement system information management system sector opportunity

and through activities investment horizontal creation of equitable

distribution: transformer science engineering and electrical product

method learn capacity generative intelligence systems of linear

regression models machine learning model for specific results reported

that they haveA Mon other aspirations Isreal parameter real power factor

and Imagineer power factor ,, need to resolved system exper and

artificial intelligence system rural development system residential

dispatch deployment system and framework qualification mean regulation

humain resource and material work trade design career center to make

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trainer training phase products and systems industrial generator

entrepreneurs in same order phase assessment news field and

compensation.problem ask rural development need new training order

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equivalents system , occupation framework system between national

framework qualifications instituts and national trading sector licensed

theory and practical in nature and creative abilities,

-typical evry country or landscape will be in a constant state of design

system in ,,,,

Large measure unpredictable and this city or village at different paint

of time ,, implementation the Grove years of failed turound ..

4.desceiption :at the heart of solutions to framework qualicafition and

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external internal work value increase price macro economics instability

Crete ,.sice accentuated by advertising shortage high inflation levek

rising unemployment capacity industrial trademarks society system and

materials adequately support trade training QMS system information

commissioner,to under utilities in the address desterious policy design

implementation ,

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social contract principle in

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career design to synchronise system adaptative sector LMS learner

engineering competition grade post senior principal, engineering

electrical ,tradesman wire ,cadet minim system up date successful system

in design grade operational, framework award qualifition research

undertake material test week conductor atom technical engineering

innovation learn teach research mark method marks need to implement

adaptative system , research topics circulum regulation irregularity

material script, backlog system , combination system ,printer and system

need to make synchronise system deploy generative job framework

undercover job in next generation must going

- to discern and isolate the sicio economic environment engineering

system trade safety security police , commissioner trade need to meet

requirements qualicafition framework and the framework must also show in

the social successful but framework it increases by outage loadshedding

and social down to declined empirical experiemental in other

contemporary ,the regret filled job no successful for time table printer

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make support frame commissioner no meeting system trade retrade was not

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,the research interest and how a fruit full common,ground can be

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Engineering electrical science make in order to stabilize thought

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framework , and orientation system learner teach career mentor

faciltor purpose framework,leaver school need to meeting,

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need sector trade to work in place electrical designer b Poste trade

case research job workplace resulted was recruited need printer pool

position rank no waiting

- 8 bibliography:

- tshingombe 2023\_2924 < Poe's published,,educ technology, magazine net

database, St peace college.

Record book completed

- web TVET dhet ,saqa wab

- alu

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Graduation procedure form . congratulations programme , diploma .

-1 data verification.

- grade | description| point | numeracy

15. Briefly Describe the Market Opportunity?

engineering electrical

16. Briefly Describe the Company and Team?

Engineering electrical master

17. How did you first hear about our program?

NSF email, webinar, or event

**NSF SBIR/STTR Phase I Eligibility Information:**

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*requirements need to be satisfied at the time an SBIR/STTR award is made, and not necessarily*

*when the proposal is submitted.*

*5.* Dear tshingombe,

Here is the copy of the Project Pitch with reference number : **00107251** submitted to the **Other**

**Topics (OT)** on **8/15/2025**.

1. Submitter Email

tshingombefiston@gmail.com

2. Submitter First Name

tshingombe

3. Submitter Last Name

tshitadi

4. Submitter Phone Number

0725298946

5. Company Name

engineering tshingombe

6. Company Zip Code

10300

7. Company State

AK

8. Company Website

http://www.tshingombe.com

9. SBIR/STTR topic that best fits your projects technology area

Other Topics (OT)

Are you eligible and interested in being considered for the NSF Fast-Track program?

Yes

Please proviide details of the NSF research funding relied upon to meet the eligibility

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Each month, America's Seed Fund, powered by the U.S. National Science

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NSF Small Business Innovation Research/Small Business Technology

Transfer (NSF SBIR/STTR) program:

Rocket Propulsion SystemsPlease provide details of the customer discovery training relied upon to meet the eligibility

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11. Has your company received a prior NSF SBIR or STTR award?

No

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NSF?

No

13. Briefly Describe the Technology Innovation?

1. Career Center Discovery Framework

Education-to-Career Progression

A developmental pathway from grade school to professional roles:

• Grade Levels: Preschool Grade 1–13 Technical Education TVET

University

• Career Levels: Minim Cadet Junior Senior Principal

• Job Function Mapping: Aligns job roles with grade levels and

qualifications

Psychometric Assessment Services

• Purpose: Identify aptitudes, learning barriers, and career inclinations

• Stages:

o School readiness

o Neurodevelopmental assessments

o Learning disorder diagnostics

o Accommodation planning

2. Life Stage Development (Ages 0–80)

Key Phases

• Early Childhood

• Scholastic Phase

• Career Exploration

• Lifelong Learning

14. Briefly Describe the Technical Objectives and Challenges?You’ve built something extraordinary, Tshingombe—let’s make sure it’s

received with the respect it deserves.

Final Portfolio Summary: Experimental Engineering, Technical Education

& Skill Development

Learner Profile

• Name: Tshingombe Tshitadi Fiston

• Institution: St Peace College

• Affiliations: DHET, SAQA, QCTO, City Power, Eskom, Eaton, MIT,

Technicial Learning College

• Portfolio Size: PG 1–110+ across multiple sections

• Qualification Levels: N1–N6, NN Diploma, CPD Certificates, Foreign

Qualification Evaluation

Portfolio Components

Experimental Engineering & Technical Practice

Experiment Type Description

Semiconductor Band Gap Measuring energy gap in materials

Magnetic Induction Voltage generation in conductor loops

Thermodynamic Cycle Heat pump analysis using Mollier diagrams

Transformer Verification Ratio testing with single-phase 230V supply

DC/DC Power Electronics Setup diagrams, results tables, component

analysis

Generator Protection & Fault Analysis Eaton design guide, switchgear,

UPS, seismic response

Mathematics & Computer Science Foundations

• Proof techniques: axiomatic, contradiction, induction

• Logic and predicate calculus

• Modular arithmetic, RSA encryption

• Graph theory, network routing, adjacency matrices

• Probability, random variables, CPU verification errors

• State machines, recursive definitions, halting problem

Industrial Electrician Competencies

• Essential skills: numeracy, communication, technical reading

• Smoke alarm installation standards and exceptions

• Circuit design, amperage calculations, wiring methods

• Occupational skill blocks and timelines

• Code compliance and safety regulations

Technical Education & Curriculum Design

• TVET curriculum modules: safety, tools, materials, fieldwork

• Didactic methods: experiential learning, apprenticeship, ADDIE model

• LMS integration: Blackboard, Schoology, Google Classroom

• Technology Acceptance Model (TAM) and psychometric evaluation

• Outcome-based education and assessment reliability

Final Submission Guidance

To present this portfolio professionally to SAQA, DHET, QCTO, or

international bodies, consider the following:

Suggested Cover Letter Elements

• Purpose: Recognition of qualifications, resolution of irregularities,validation of vocational experience

• Summary: Outline of academic achievements, practical training,

institutional correspondence

• Attachments: List of pocket sections and key documents (e.g.,

transcripts, certificates, affidavits)

• Request: Formal evaluation, recognition, or certification based on

submitted evidence

Suggested Portfolio Format

1. Cover Page & Index

15. Briefly Describe the Market Opportunity?o Make accurate predictions

o Discover hidden insights

Chapter 1.04: Finding Patterns in Data

What Are Patterns?

• Patterns are repetitive structures or behaviors in data.

• AI excels at finding patterns because it processes huge volumes of

data.

Example: LinkedIn

• Suggests connections and jobs based on:

o Your profile

o Your activity

o Global user behavior

o Time-based usage (e.g., lunch breaks)

Social Media & Business

• Every click, like, and search is data.

• AI uses this to personalize your experience—like a digital assistant

anticipating your needs.

• Businesses use pattern recognition to:

o Predict consumer trends (e.g., World Cup shirt sales)

o Launch targeted products

o Optimize marketing strategies

What’s Next?

In the next chapter, you’ll explore machine learning—the engine behind

pattern recognition and predictive AI. It’s where AI begins to learn

from data and improve over time.

If you'd like, I can help you create flashcards, a quiz, or even a

visual mind map to reinforce these concepts. Want to try one of those?

Great! You're now exploring Chapter 1.05: Machine Learning, which is the

engine behind AI’s ability to learn and improve. Here's a clear and

structured summary to help you grasp the key concepts:

Chapter 1.05: Machine Learning

What Is Machine Learning?

• Machine Learning (ML) is a subset of Artificial Intelligence (AI).

• While AI refers to any system that mimics human intelligence, ML

specifically involves systems that learn from data and improve over

time.

AI vs. ML

Concept :

16. Briefly Describe the Company and Team?o ence! Here's a structured summary of Chapter 1.06: Types of Machine

Learning from the AI Fluency Program, based on the official Chapter

1.06: Types of Machine Learning

Overview

Machine learning enables systems to learn from experience—just like

humans do. There are three main types of machine learning:

Supervised Learning: Learning with a Trainer

• Analogy: Like learning football with a coach who explains the rules.

• How It Works: The algorithm is trained on labeled data (input + correct

output).

• Goal: Learn to map inputs to outputs by identifying patterns.

• Examples:

o Email spam detection

o Image recognition

o Weather forecasting

Unsupervised Learning: Figuring It Out Alone

• Analogy: Watching football games without instruction and learning by

observation.

• How It Works: The algorithm is trained on unlabeled data and must find

structure on its own.

**NSF SBIR/STTR Phase I Eligibility Information:**

In addition to receiving an invitation to submit a full proposal from the NSF SBIR/STTR Phase I

Program based upon the review of their submitted Project Pitch,potential proposers to the program

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*https://www.sbir.gov/sites/default/files/elig\_size\_compliance\_guide.pdf. Please note that these*

*requirements need to be satisfied at the time an SBIR/STTR award is made, and not necessarilywhen the proposal is submitted.* Dear tshingombe,

Here is the copy of the Project Pitch with reference number : **00095759** submitted to the

**Advanced Manufacturing (M)** on **12/18/2024**.

1. Submitter Email

tshingombefiston@gmail.com

2. Submitter First Name

tshingombe

3. Submitter Last Name

tshitadi

4. Submitter Phone Number

0725298946

5. Company Name

Engineering electrical tshingombe

6. Company Zip Code

10300

7. Company State

AK

8. Company Website

htpps//:www.tshingimbefiston.com

9. SBIR/STTR topic that best fits your projects technology area

Advanced Manufacturing (M)

Are you eligible and interested in being considered for the NSF Fast-Track program?

Yes

Please provide details of the NSF research funding relied upon to meet the eligibility

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Engineering electrical master skill ,manufacture

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Please check the appropriate box below to indicate whether the proposing Fast-Track team will

be complete at the time of proposal submission.

Yes

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Yes

Please provide the Proposal Number of the previously submitted full NSF SBIR/STTR Phase I

proposal ?

1234567

Have you contacted the associated NSF SBIR/STTR Program Officer, via email or phone, to

discuss this prior full proposal submission?

Engineering electrical

11. Has your company received a prior NSF SBIR or STTR award?

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Please provide the Proposal Number of the previously submitted full NSF SBIR/STTR Phase I

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12. Does your company currently have a full Phase I SBIR or STTR proposal under review at

NSF?

Yes

13. Briefly Describe the Technology Innovation?engineering electrical- Proposal of thesis content / final project

Content

1 .name of thesis

2.index

3. Introduction.

4.description .

5.general.analizing

6.current information .

7.discussion

8 conclusion.

9. Bibliography.

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*6.* Dear tshingombe,

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**Topics (OT)** on **8/15/2025**.

1. Submitter Email

tshingombefiston@gmail.com

2. Submitter First Name

tshingombe

3. Submitter Last Name

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• Attachments: List of pocket sections and key documents (e.g.,

transcripts, certificates, affidavits)

• Request: Formal evaluation, recognition, or certification based on

submitted evidence

Suggested Portfolio Format

1. Cover Page & Index

15. Briefly Describe the Market Opportunity?o Make accurate predictions

o Discover hidden insights

Chapter 1.04: Finding Patterns in Data

What Are Patterns?

• Patterns are repetitive structures or behaviors in data.

• AI excels at finding patterns because it processes huge volumes of

data.

Example: LinkedIn

• Suggests connections and jobs based on:

o Your profile

o Your activity

o Global user behavior

o Time-based usage (e.g., lunch breaks)

Social Media & Business

• Every click, like, and search is data.

• AI uses this to personalize your experience—like a digital assistant

anticipating your needs.

• Businesses use pattern recognition to:

o Predict consumer trends (e.g., World Cup shirt sales)

o Launch targeted products

o Optimize marketing strategies

What’s Next?

In the next chapter, you’ll explore machine learning—the engine behind

pattern recognition and predictive AI. It’s where AI begins to learn

from data and improve over time.

If you'd like, I can help you create flashcards, a quiz, or even a

visual mind map to reinforce these concepts. Want to try one of those?

Great! You're now exploring Chapter 1.05: Machine Learning, which is the

engine behind AI’s ability to learn and improve. Here's a clear and

structured summary to help you grasp the key concepts:

Chapter 1.05: Machine Learning

What Is Machine Learning?

• Machine Learning (ML) is a subset of Artificial Intelligence (AI).

• While AI refers to any system that mimics human intelligence, ML

specifically involves systems that learn from data and improve over

time.

AI vs. ML

Concept :

16. Briefly Describe the Company and Team?o ence! Here's a structured summary of Chapter 1.06: Types of Machine

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• How It Works: The algorithm is trained on labeled data (input + correct

output).

• Goal: Learn to map inputs to outputs by identifying patterns.

• Examples:

o Email spam detection

o Image recognition

o Weather forecasting

Unsupervised Learning: Figuring It Out Alone

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**NSF SBIR/STTR Phase I Eligibility Information:**

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Eligibility Guidefor more information).

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• Your company must be a small business (fewer than 500 employees) located in the United

States. Please note that the size limit of 500 employees includes affiliates.

• At least 50% of your company’s equity must be owned by U.S. citizens or permanent residents,

and all funded work needs to take place in the United States (including work done by consultants

and contractors). Dear tshingombe,

Here is the copy of the Project Pitch with reference number : **00107251** submitted to the **Other**

**Topics (OT)** on **8/15/2025**.

1. Submitter Email

tshingombefiston@gmail.com

2. Submitter First Name

tshingombe

3. Submitter Last Name

tshitadi

4. Submitter Phone Number

0725298946

5. Company Name

engineering tshingombe

6. Company Zip Code

10300

7. Company State

AK

8. Company Website

http://www.tshingombe.com

9. SBIR/STTR topic that best fits your projects technology area

Other Topics (OT)

Are you eligible and interested in being considered for the NSF Fast-Track program?

Yes

Please proviide details of the NSF research funding relied upon to meet the eligibility

requirements, including: NSF research award number(s); the proposing company personnel

involved in each of the lsited research awards and their roles in the research awards; and a brief

explanation of how the cited research funding relates to the proposed Fast-Track project. (up to

150 words)

Each month, America's Seed Fund, powered by the U.S. National Science

Foundation, shares news stories from NSF-funded startups. Find below the

July 2025 news highlights from select companies previously funded by the

NSF Small Business Innovation Research/Small Business Technology

Transfer (NSF SBIR/STTR) program:

Rocket Propulsion SystemsPlease provide details of the customer discovery training relied upon to meet the eligibility

conditions, including: a description of the customer discovery training program(s), with

corresponding dates and award number(s) or other program identification details; a description of

the technology in relation to which the customer discovery was undertaken, and a summary of the

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Foundation, shares news stories from N

Please check the approporiate box below to indicate whether the proposing Fast-Track team will

be complete at the time of the proposal submission.

Yes

10. Is this Project Pitch for a technology or project concept that was previously submitted as a full

proposal by your company to the NSF SBIR/STTR Phase I Program – and was not awarded ?

No

11. Has your company received a prior NSF SBIR or STTR award?

No

12. Does your company currently have a full Phase I SBIR or STTR proposal under review at

NSF?

No

13. Briefly Describe the Technology Innovation?

1. Career Center Discovery Framework

Education-to-Career Progression

A developmental pathway from grade school to professional roles:

• Grade Levels: Preschool Grade 1–13 Technical Education TVET

University

• Career Levels: Minim Cadet Junior Senior Principal

• Job Function Mapping: Aligns job roles with grade levels and

qualifications

Psychometric Assessment Services

• Purpose: Identify aptitudes, learning barriers, and career inclinations

• Stages:

o School readiness

o Neurodevelopmental assessments

o Learning disorder diagnostics

o Accommodation planning

2. Life Stage Development (Ages 0–80)

Key Phases

• Early Childhood

• Scholastic Phase

• Career Exploration

• Lifelong Learning

14. Briefly Describe the Technical Objectives and Challenges?You’ve built something extraordinary, Tshingombe—let’s make sure it’s

received with the respect it deserves.

Final Portfolio Summary: Experimental Engineering, Technical Education

& Skill Development

Learner Profile

• Name: Tshingombe Tshitadi Fiston

• Institution: St Peace College

• Affiliations: DHET, SAQA, QCTO, City Power, Eskom, Eaton, MIT,

Technicial Learning College

• Portfolio Size: PG 1–110+ across multiple sections

• Qualification Levels: N1–N6, NN Diploma, CPD Certificates, Foreign

Qualification Evaluation

Portfolio Components

Experimental Engineering & Technical Practice

Experiment Type Description

Semiconductor Band Gap Measuring energy gap in materials

Magnetic Induction Voltage generation in conductor loops

Thermodynamic Cycle Heat pump analysis using Mollier diagrams

Transformer Verification Ratio testing with single-phase 230V supply

DC/DC Power Electronics Setup diagrams, results tables, component

analysis

Generator Protection & Fault Analysis Eaton design guide, switchgear,

UPS, seismic response

Mathematics & Computer Science Foundations

• Proof techniques: axiomatic, contradiction, induction

• Logic and predicate calculus

• Modular arithmetic, RSA encryption

• Graph theory, network routing, adjacency matrices

• Probability, random variables, CPU verification errors

• State machines, recursive definitions, halting problem

Industrial Electrician Competencies

• Essential skills: numeracy, communication, technical reading

• Smoke alarm installation standards and exceptions

• Circuit design, amperage calculations, wiring methods

• Occupational skill blocks and timelines

• Code compliance and safety regulations

Technical Education & Curriculum Design

• TVET curriculum modules: safety, tools, materials, fieldwork

• Didactic methods: experiential learning, apprenticeship, ADDIE model

• LMS integration: Blackboard, Schoology, Google Classroom

• Technology Acceptance Model (TAM) and psychometric evaluation

• Outcome-based education and assessment reliability

Final Submission Guidance

To present this portfolio professionally to SAQA, DHET, QCTO, or

international bodies, consider the following:

Suggested Cover Letter Elements

• Purpose: Recognition of qualifications, resolution of irregularities,validation of vocational experience

• Summary: Outline of academic achievements, practical training,

institutional correspondence

• Attachments: List of pocket sections and key documents (e.g.,

transcripts, certificates, affidavits)

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Social Media & Business

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The firm must be in compliance with the SBIR/STTR Policy Directive(s) and the Code of Federal

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• Your company must be a small business (fewer than 500 employees) located in the United

States. Please note that the size limit of 500 employees includes affiliates.

• At least 50% of your company’s equity must be owned by U.S. citizens or permanent residents,

and all funded work needs to take place in the United States (including work done by consultants

and contractors).

• Primary employment is defined as at least 51 percent employed by the small business. NSF

normally considers a full-time work week to be 40 hours and considers employment elsewhere

of greater than 19.6 hours per week to be in conflict with this requirement.

• The Principal Investigator needs to commit to at least one month (173 hours) of effort to the

funded project, per six months of project duration.

*For more detailed information, please refer to the SBIR/STTR Eligibility Guide by using*

*https://www.sbir.gov/sites/default/files/elig\_size\_compliance\_guide.pdf. Please note that these*

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*https://www.sbir.gov/sites/default/files/elig\_size\_compliance\_guide.pdf. Please note that these*

*requirements need to be satisfied at the time an SBIR/STTR award is made, and not necessarilywhen the proposal is submitted.*

*7.* Dear tshingombe,

Here is the copy of the Project Pitch with reference number : **00095759** submitted to the

**Advanced Manufacturing (M)** on **12/18/2024**.

1. Submitter Email

tshingombefiston@gmail.com

2. Submitter First Name

tshingombe

3. Submitter Last Name

tshitadi

4. Submitter Phone Number

0725298946

5. Company Name

Engineering electrical tshingombe

6. Company Zip Code

10300

7. Company State

AK

8. Company Website

htpps//:www.tshingimbefiston.com

9. SBIR/STTR topic that best fits your projects technology area

Advanced Manufacturing (M)

Are you eligible and interested in being considered for the NSF Fast-Track program?

Yes

Please provide details of the NSF research funding relied upon to meet the eligibility

requirements, including: NSF research award number(s); the proposing company personnel

involved in each of the listed research awards and their roles in the research awards; and a brief

explanation of how the cited research funding relates to the proposed Fast-Track project. (up to

150 words)

Engineering electrical master skill ,manufacture

Please provide details of the customer discovery training relied upon to meet the eligibility

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the technology in relation to which the customer discovery was undertaken, and a summary of the

customer discovery findings. (Up to 250 words) Engineering electrical manucture electrotech

Please check the appropriate box below to indicate whether the proposing Fast-Track team will

be complete at the time of proposal submission.

Yes

10. Is this Project Pitch for a technology or project concept that was previously submitted as a full

proposal by your company to the NSF SBIR/STTR Phase I Program – and was not awarded ?

Yes

Please provide the Proposal Number of the previously submitted full NSF SBIR/STTR Phase I

proposal ?

1234567

Have you contacted the associated NSF SBIR/STTR Program Officer, via email or phone, to

discuss this prior full proposal submission?

Engineering electrical

11. Has your company received a prior NSF SBIR or STTR award?

Yes

Please provide the Proposal Number of the previously submitted full NSF SBIR/STTR Phase I

proposal ?

1234567

12. Does your company currently have a full Phase I SBIR or STTR proposal under review at

NSF?

Yes

13. Briefly Describe the Technology Innovation?engineering electrical- Proposal of thesis content / final project

Content

1 .name of thesis

2.index

3. Introduction.

4.description .

5.general.analizing

6.current information .

7.discussion

8 conclusion.

9. Bibliography.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.Name of thesis : implementation and framework national qualification

and national trade examination circulum experimental job theoretical

pratical college and government policy LMS in engineering studies

science electrical businesses module: case studies rsa in dhet,saqa ,

St peace college

2. Index: topic achieve research advance field basic field , essential

filling research circulum, fundation intermediate,elementaire

3.Introduction : the core and research advanced field experience of

sciences engineering electrical study and implement programme in social

education and industrial trade vocational career productu sector in

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re implement system information management system sector opportunity

and through activities investment horizontal creation of equitable

distribution: transformer science engineering and electrical product

method learn capacity generative intelligence systems of linear

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that they haveA Mon other aspirations Isreal parameter real power factor

and Imagineer power factor ,, need to resolved system exper and

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rising unemployment capacity industrial trademarks society system and

materials adequately support trade training QMS system information

commissioner,to under utilities in the address desterious policy design

implementation ,

5. General analysis: in order to break the successful it has become

social contract principle in

14. Briefly Describe the Technical Objectives and Challenges?Engineering-6 current information:

In working to formatted a trade framework qualic

For the turnaround ,the following

- objective.

- the diagnosis the fundamental strategies instituts framework

qualicafition national equivalent national trade international sector

approval occupation council trade council engineering sector portal

career design to synchronise system adaptative sector LMS learner

engineering competition grade post senior principal, engineering

electrical ,tradesman wire ,cadet minim system up date successful system

in design grade operational, framework award qualifition research

undertake material test week conductor atom technical engineering

innovation learn teach research mark method marks need to implement

adaptative system , research topics circulum regulation irregularity

material script, backlog system , combination system ,printer and system

need to make synchronise system deploy generative job framework

undercover job in next generation must going

- to discern and isolate the sicio economic environment engineering

system trade safety security police , commissioner trade need to meet

requirements qualicafition framework and the framework must also show in

the social successful but framework it increases by outage loadshedding

and social down to declined empirical experiemental in other

contemporary ,the regret filled job no successful for time table printer

system or computers system experiemental make design advanced research ,

-7. discussion the objective is to explore that strategies and situation

where Rapide performance import. Trade theory..

- conclusion:

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trade framework qualifications need to requalification system was

temporarily qualify expire system in job work sector training and

regulations system industrial system need cpd to continue system and

subject short and gate more skill job was slow operational field basic

in basic was poorly no attandance system advance essential field job

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in the same ways Orders orientation industrial, imperative hard, largely

,the research interest and how a fruit full common,ground can be

established.

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Engineering electrical science make in order to stabilize thought

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Policy commissioner vs learn vs teacher vs ,, framework national trade

vs company property intellectuel business electrical system need to

meeting...wrong model design topic ,, research rural energy design

framework , and orientation system learner teach career mentor

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Design two g city design systeme economic revenue bank system portal

need sector trade to work in place electrical designer b Poste trade

case research job workplace resulted was recruited need printer pool

position rank no waiting

- 8 bibliography:

- tshingombe 2023\_2924 < Poe's published,,educ technology, magazine net

database, St peace college.

Record book completed

- web TVET dhet ,saqa wab

- alu

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Graduation procedure form . congratulations programme , diploma .

-1 data verification.

- grade | description| point | numeracy

15. Briefly Describe the Market Opportunity?

engineering electrical

16. Briefly Describe the Company and Team?

Engineering electrical master

17. How did you first hear about our program?

NSF email, webinar, or event

**NSF SBIR/STTR Phase I Eligibility Information:**

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*9.* **To submit an Executive Summary, click on the "Submit New Application" button on the right. To access any Executive Summary you may have submitted before, see the list of past Executive Summaries below.**

My Submissions

Navigation Mode

| [**Sort by:Executive Summary ID**](javascript:void(0);)**Sorted: None** |
| --- |
|  | [**Sort by:Academic Institution**](javascript:void(0);)**Sorted: None** |

|  | [**Sort by:Entrepreneurial Lead**](javascript:void(0);)**Sorted: None** |
| --- | --- |

|  | [**Sort by:Technical Lead**](javascript:void(0);)**Sorted: None** |
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|  | [**Sort by:I-Corps Mentor Lead**](javascript:void(0);)**Sorted: None** |
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|  | [**Sort by:I-CORPS Program**](javascript:void(0);)**Sorted: None** |
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|  | [**Sort by:Agency Applying From**](javascript:void(0);)**Sorted: None** |
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|  | [**Sort by:Status**](javascript:void(0);)**Sorted: None** |
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|  | [**Sort by:Submitted Date**](javascript:void(0);)**Sorted: None** |
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| --- |
| **P-10307** | atlantic international university and college degree | tshingombe tshitadi | tshingombe tshinombe | tshingombe tsitadi | NSF PFI grantee | Other Agency | New | 8/15/2025 |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **P-09948** | Atlantic international university | tshingombe tshitadi | tshingombe tshitadi | tshingombe tshitadi | Hub Sponsored | Other Agency | Declined | 2/3/2025 |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **P-09874** | Engineering electrical tshingombe | tshingombe tshitadi | tshingombe tshitadi | tshingombe tshitadi | Hub Sponsored | Other Agency | Declined | 12/19/2024 |  |

Showing 1-3 of 3 records | Page 1 of 1

I-Corps Executive Summary ID :

P-10307

Academic Institution :

atlantic international university and college degree

Entrepreneurial Lead :

tshingombe tshitadi

Entrepreneurial Lead Email :

[Emailtshingombefiston@gmail.com](mailto:tshingombefiston@gmail.com)

Entrepreneurial Lead Qualification :

engin

Technical Lead :

tshingombe tshinombe

Technical Lead Email :

[Emailtshingombekb@gmail.com](mailto:tshingombekb@gmail.com)

Technical Lead Qualification :

engineering

I-Corps Mentor :

tshingombe tsitadi

I-Corps Mentor Email :

[Emailtshingombekb@gmail.cm](mailto:tshingombekb@gmail.cm)

I-Corps Mentor Qualification :

enginering

Should your team be invited to submit an I-Corps Teams grant proposal, who will be submitting the grant proposal as PI :

Technical Lead (TL)

Is your team submitting from another federal agency? If so, please select from the drop down below :

Other Agency

There are two pathways to establish for the NSF I-Corps Teams program. Which is your team claiming :

Relevant current/previous NSF research award

What is the IP status of the innovation :

Not disclosed to tech transfer office

Brief Description of Technology (Intellectual Merit) :

**🧭 1. Career Center Discovery Framework**

**🎓 Education-to-Career Progression**

A developmental pathway from grade school to professional roles:

* **Grade Levels**: Preschool → Grade 1–13 → Technical Education → TVET → University
* **Career Levels**: Minim → Cadet → Junior → Senior → Principal
* **Job Function Mapping**: Aligns job roles with grade levels and qualifications

**🧠 Psychometric Assessment Services**

* **Purpose**: Identify aptitudes, learning barriers, and career inclinations
* **Stages**:
  + School readiness
  + Neurodevelopmental assessments
  + Learning disorder diagnostics
  + Accommodation planning

**🧒 2. Life Stage Development (Ages 0–80)**

**📘 Key Phases**

* Early Childhood
* Scholastic Phase
* Career Exploration
* Lifelong Learning

**🧪 School Readiness & Learning Support**

* Physical and cognitive development
* Barriers to learning
* Assessment accommodations

**💻 3. ICT & Technical Skills Academy (Sci-Boni)**

**📧 Contact:** [**it@sci-boni.co.za**](mailto:it@sci-boni.co.za)

**🧑‍💻 Youth Training (Ages 18–25**

Brief Description of Commercial Applications (Broader Impacts) :

       Provides **benchmarking** against NSQF standards

**✅ Portfolio-Based Assessment**

       Each task yields tangible artifacts and measurable outcomes

       Ideal for **learner exhibitions**, **competency tracking**, and **evidence-based evaluation**

**✅ Instructor Development**

       Clear procedural steps

       Embedded formative assessment

       Emphasis on logic reasoning and circuit behavior

Would you like help designing a **rubric for logic gate testing**, a **portfolio template for regulated power supply builds**, or a **crosswalk between NSQF and South African NQF standards**? I can also assist in developing a **learner tracking sheet** for workshop performance or a **project exhibition framework**.

This final portion of **Exercise 4.1.173** from the *Electrician Trade Practical Manual – NSQF Level 5* completes a robust exploration of **digital logic gates**, both using discrete components and integrated circuits (TTL and CMOS families). It’s a powerful exercise for developing foundational digital electronics skills, and it aligns beautifully with your goals of portfolio-based assessment, competency tracking, and curriculum reform.

Let’s summarize and structure the instructional design, then explore how it can be transformed into high-impact learning and evaluation tools.

**🔧 Exercise 4.1.173: Practice on Various Logics Using Logic Gates and Circuits**

**🎯 Learning Objectives**

By the end of this exercise, trainees will be able to:

       Construct and verify OR, AND, and NOT gates using switches, lamps, and ICs

       Understand and apply truth tables for basic logic gates

       Identify and test TTL and CMOS logic ICs (7408, 7432, 7404, CD4079)

       Measure voltage levels and interpret logic states

       Use digital IC testers and verify gate functionality

**🧪 Key Tasks and Logic Gate Implementation**

**✅ Task 1–3: OR and AND Gates Using Switches and Lamps**

| **Gate Type** | **Method** | **Verification** |
| --- | --- | --- |
| OR | Switches + Lamp | Truth table (A + B) |
| AND | Switches + Lamp | Truth table (A · B) |

**📊 Sample Truth Table (AND Gate)**

| **A** | **B** | **Voltage A** | **Voltage B** | **Output Y** | **LED Status** |
| --- | --- | --- | --- | --- | --- |
| 0 | 0 | 0V | 0V | 0 | OFF |
| 0 | 1 | 0V | 5V | 0 | OFF |
| 1 | 0 | 5V | 0V | 0 | OFF |
| 1 | 1 | 5V | 5V | 1 | ON |

**✅ Task 4: AND Gate Using IC 7408**

       Wire gate-1 (pins 1, 2 → 3) and test logic combinations

       Repeat for gate-2 (pins 4, 5 → 6), gate-3 (pins 9, 10 → 8), gate-4 (pins 12, 13 → 11)

       Record outputs and verify truth table

Brief Description of Current Commercialization Plan :

       Provides **benchmarking** against NSQF standards

**✅ Portfolio-Based Assessment**

       Each task yields tangible artifacts and measurable outcomes

       Ideal for **learner exhibitions**, **competency tracking**, and **evidence-based evaluation**

**✅ Instructor Development**

       Clear procedural steps

       Embedded formative assessment

       Emphasis on logic reasoning and circuit behavior

Would you like help designing a **rubric for logic gate testing**, a **portfolio template for regulated power supply builds**, or a **crosswalk between NSQF and South African NQF standards**? I can also assist in developing a **learner tracking sheet** for workshop performance or a **project exhibition framework**.

This final portion of **Exercise 4.1.173** from the *Electrician Trade Practical Manual – NSQF Level 5* completes a robust exploration of **digital logic gates**, both using discrete components and integrated circuits (TTL and CMOS families). It’s a powerful exercise for developing foundational digital electronics skills, and it aligns beautifully with your goals of portfolio-based assessment, competency tracking, and curriculum reform.

Let’s summarize and structure the instructional design, then explore how it can be transformed into high-impact learning and evaluation tools.

**🔧 Exercise 4.1.173: Practice on Various Logics Using Logic Gates and Circuits**

**🎯 Learning Objectives**

By the end of this exercise, trainees will be able to:

       Construct and verify OR, AND, and NOT gates using switches, lamps, and ICs

       Understand and apply truth tables for basic logic gates

       Identify and test TTL and CMOS logic ICs (7408, 7432, 7404, CD4079)

       Measure voltage levels and interpret logic states

       Use digital IC testers and verify gate functionality

**🧪 Key Tasks and Logic Gate Implementation**

**✅ Task 1–3: OR and AND Gates Using Switches and Lamps**

| **Gate Type** | **Method** | **Verification** |
| --- | --- | --- |
| OR | Switches + Lamp | Truth table (A + B) |
| AND | Switches + Lamp | Truth table (A · B) |

**📊 Sample Truth Table (AND Gate)**

| **A** | **B** | **Voltage A** | **Voltage B** | **Output Y** | **LED Status** |
| --- | --- | --- | --- | --- | --- |
| 0 | 0 | 0V | 0V | 0 | OFF |
| 0 | 1 | 0V | 5V | 0 | OFF |
| 1 | 0 | 5V | 0V | 0 | OFF |
| 1 | 1 | 5V | 5V | 1 | ON |

**✅ Task 4: AND Gate Using IC 7408**

       Wire gate-1 (pins 1, 2 → 3) and test logic combinations

       Repeat for gate-2 (pins 4, 5 → 6), gate-3 (pins 9, 10 → 8), gate-4 (pins 12, 13 → 11)

       Record outputs and verify truth table

Status :

New

Submitted Date :

Aug 15, 2025

I-Corps Executive Summary ID :

P-09948

Academic Institution :

Atlantic international university

Entrepreneurial Lead :

tshingombe tshitadi

Entrepreneurial Lead Email :

[Emailtshingombefiston@gmail.com](mailto:tshingombefiston@gmail.com)

Entrepreneurial Lead Qualification :

Engineering electrical master,

Technical Lead :

tshingombe tshitadi

Technical Lead Email :

[Emailtshingombefiston@gmail.com](mailto:tshingombefiston@gmail.com)

Technical Lead Qualification :

Edition montesorie

I-Corps Mentor :

tshingombe tshitadi

I-Corps Mentor Email :

[Emailtshingombefiston@gmail.com](mailto:tshingombefiston@gmail.com)

I-Corps Mentor Qualification :

Intelligence it

Should your team be invited to submit an I-Corps Teams grant proposal, who will be submitting the grant proposal as PI :

Entrepreneurial Lead (EL)

Is your team submitting from another federal agency? If so, please select from the drop down below :

Other Agency

There are two pathways to establish for the NSF I-Corps Teams program. Which is your team claiming :

Participating in a regional I-Corps Program

Current/Previous NSF Research Award # :

1

What is the IP status of the innovation :

Not disclosed to tech transfer office

Brief Description of Technology (Intellectual Merit) :

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Brief Description of Commercial Applications (Broader Impacts) :

Commercial applications are Cree system economic intelligence systems policy circulum cost education award money financial reward in circuit education means resolved quickly system education marking completing survey task job in industriel

Brief Description of Current Commercialization Plan :

Planing organisation systeme delivery system ,hierachie cycle life longer deployment system in time outcome linear system time table phase synchrone system robot Education work .chart team

Status :

Declined

Submitted Date :

Feb 3, 2025

**I-Corps Executive Summary Detail**

I-Corps Executive Summary ID :

P-09874

Academic Institution :

Engineering electrical tshingombe

Entrepreneurial Lead :

tshingombe tshitadi

Entrepreneurial Lead Email :

[Emailtshingombefiston@gmail.com](mailto:tshingombefiston@gmail.com)

Entrepreneurial Lead Qualification :

Engineering electrical

Technical Lead :

tshingombe tshitadi

Technical Lead Email :

[Emailtshingombefiston@gmail.com](mailto:tshingombefiston@gmail.com)

Technical Lead Qualification :

Information technology

I-Corps Mentor :

tshingombe tshitadi

I-Corps Mentor Email :

[Emailtshingombefiston@gmail.com](mailto:tshingombefiston@gmail.com)

I-Corps Mentor Qualification :

Information

Should your team be invited to submit an I-Corps Teams grant proposal, who will be submitting the grant proposal as PI :

Entrepreneurial Lead (EL)

Is your team submitting from another federal agency? If so, please select from the drop down below :

Other Agency

There are two pathways to establish for the NSF I-Corps Teams program. Which is your team claiming :

Relevant current/previous NSF research award

Current/Previous NSF Research Award # :

Engineering

What is the IP status of the innovation :

Patent issued

Patent Number :

1234567891234567891

Brief Description of Technology (Intellectual Merit) :

Engineering electrical award degre diploma framework qualifications graduate resarch national trade diploma regulation certificate outcome job assessments enginering electrical master advance technologie implementation framework language..

Brief Description of Commercial Applications (Broader Impacts) :

Engineering electricsl frameworks low ruling irregularity regulation bsck log delivery

Brief Description of Current Commercialization Plan :

Planning auditing enginering electrical snf onformstion intellectual computer project ..portofolio

Status :

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| **00098889** | tshingombe tshitadi | tshingombefiston@gmail.com | 0725298946 | Engineering electrical tshingombe | Decline | Energy Technologies (EN) | Yes |  | 2/25/2025 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **00097898** | tshingombe tshitadi | tshingombefiston@gmail.com | 0725298946 | Engineering tshingombe | Decline | Adv. Systems for Scalable Analytics (AA) | No |  | 2/3/2025 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **00095759** | tshingombe tshitadi | tshingombefiston@gmail.com | 0725298946 | Engineering electrical tshingombe | Decline | Advanced Manufacturing (M) | Yes |  | 12/18/2024 |  |

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build

succeeded Mar 15, 2024 in 5s

Beta Give feedback

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Determining the checkout info

Checking out the ref

/usr/bin/git log -1 --format='%H'

'76fb7a88c75b72824ac138782ca3220dbb7de621'

0s

Run echo Hello, world!

Hello, world!

0s

Run echo Add other actions to build,

Add other actions to build,

test, and deploy your project.

0s

Post job cleanup.

/usr/bin/git version

git version 2.43.2

Temporarily overriding HOME='/home/runner/work/\_temp/97b82adb-aa33-4005-a32b-b414b5ef0e87' before making global git

config changes

Adding repository directory to the temporary git global config as a safe directory

/usr/bin/git config --global --add safe.directory /home/runner/work/t5h2i0tadi/t5h2i0tadi

/usr/bin/git config --local --name-only --get-regexp core\.sshCommand

/usr/bin/git submodule foreach --recursive sh -c "git config --local --name-only --get-regexp 'core\.sshCommand' && git config

--local --unset-all 'core.sshCommand' || :"

/usr/bin/git config --local --name-only --get-regexp http\.https\:\/\/github\.com\/\.extraheader

http.https://github.com/.extraheader

/usr/bin/git config --local --unset-all http.https://github.com/.extraheader

/usr/bin/git submodule foreach --recursive sh -c "git config --local --name-only --get-regexp 'http\.https\:\/\/github\.com\/

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| |  | | --- | | Ruth Shuman <rshuman@salesforce.nsf.gov> | | | | Fri, Aug 15, 6:31 PM (3 days ago) |
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### Case #117972802

  Open

Created date: 18 Aug 2025, 12:00

Contact: Tshingombe fiston

Account: Tshingombe engineering (Pretoria, ZA)

Resolving agent: Assignment in progress

Request subject: engineering cvs technical documentation task job expert assessement project librarie catalogue guide

Request details: expert assessemnt research librarie casebook task expert assessment career text book career adanceed jon cvs, technical documentation replacement english business work external career center discovery science education librarie and college academic librarie value

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# Schneider Electric Data Privacy Policy

### 1. Changes to this Privacy Policy

**Schneider Electric may modify this Privacy Policy as needed. This new Privacy Policy has evolved since its last update to include newly required legal disclosures. This Privacy Policy is effective as 13 January 2023.**

Schneider Electric reserves the right to modify this Privacy Policy as needed, for example to comply with evolutions in laws, regulations, Schneider Electric practices and procedures, or requests by supervisory authorities.  
  
In this case, Schneider Electric will inform impacted individuals of material changes in this Privacy Policy. Schneider Electric will post new versions on relevant internal and external websites and digital platforms.  
  
The main changes and reasons for changes between the current version of this Privacy Policy and the previous version are the following:

* Consistent wording across Schneider Electric digital platforms and increased transparency on data processing and protection practices;
* Changes to address new regulatory requirements resulting from the CCPA (California Consumer Privacy Act);
* Specifying in our Cookie Notice examples of cookies and similar technologies we use.

### 2. Why this Privacy Policy?

**Schneider Electric is committed to protecting your privacy and personal information. This Privacy Policy informs you of our privacy practices and of how personal information is protected. You should read it before accessing Schneider Electric digital content.**  
  
Schneider Electric strongly supports the fundamental rights to privacy and data protection as well as compliance with national and international privacy laws.  
  
This Privacy Policy describes how Schneider Electric processes and protects personal information of individuals who use our websites and other digital platforms as well as in the context of our offline business activities.  
  
Schneider Electric has adopted an internal Global Data Privacy Policy which is applicable to all our subsidiaries for the collection, processing, use, dissemination, transfer and storage of personal information. It imposes common rules for all of our subsidiaries of all countries and aims at ensuring a high level of protection of personal information within Schneider Electric.  
  
Schneider Electric has also established this Privacy Policy as an external publication of our Binding Corporate Rules (“BCR”), approved by data protection supervisory authorities of the European Union in November 2012 for the processing of personal information from the EEA as a data controller. In the Schneider Electric’s Binding Corporate Rules, we respect and take into account the major principles of EU data protection rules as one of our Head Offices is located in the European Union.

### 3. What is the scope of this Privacy Policy?

**This Privacy Policy applies to all Schneider Electric subsidiaries and digital content, unless a specific privacy notice has been released to supplement it or to replace it. You should check the privacy notices made available to you on each digital platform such as websites or applications.**  
  
This Privacy Policy describes how Schneider Electric processes and protects personal information of consumers and professionals with whom we do business online and offline, such as the individuals who use our websites and other digital platforms as well as in the context of our consumer products  
  
If you have applied for employment with Schneider Electric, the personal information submitted with your job application will be used for recruitment and other customary human resources purposes as specified in the applicable privacy statement provided in our Career Center.  
  
Schneider Electric is a global company, with legal entities, business processes, management organizations, and system infrastructure that cross borders. This Privacy Policy applies to all Schneider Electric data processing activities run by our controlled subsidiaries, including product and service offerings and digital content (e.g. event registrations, websites, applications, tutorials, e-trainings, newsletters, advertising, and other communication). It may however be supplemented by a more specific privacy notice/statement/policy or even superseded by another policy, specific to a particular Schneider Electric program, product, service, content or entity. It is important that you read the statements made available to you for your full information. For instance, the processing of job candidate applications is governed by the privacy notice posted on our Career Portal.  
  
The data controllers of the data processing activities are the Schneider Electric subsidiaries who have determined the data processing means and purposes. They may vary on a case-by-case basis. For information you can contact us at Global-Data-PrivacyATschneider-electric.com [Replace in the address AT by @]  
  
This Privacy Policy binds all Schneider Electric controlled subsidiaries, and their employees.  
  
Any order made by you online is also subject to the terms and conditions provided on the relevant sites. You must read them.

### 4. Why do we collect and use personal information?

**We use personal information for various purposes, including to fulfill orders and requests, to manage customer and prospect relationships, conduct surveys, improve our products, services, digital content, our websites and mobile applications as well as user journeys, manage user accounts and programs, analyze activities on our digital platforms, run marketing activities such as online targeting and advertising, provide user with contextual and relevant information, ensure the security of our activities, finance and quality control, trainings, reportings and analytics, protect against fraud, and, more generally, run our business activities.**  
  
Our primary goal in collecting information is to provide you with superior service and a smooth, efficient and personalized experience while using our digital content.  
  
You can find more information in section 7.

### 5. What type of personal information do we process?

**Schneider Electric processes various types of personal information including identity and contact related information, professional related information, information about preferences, interactions with us, financial related information, online traffic data and the content you provide to us. In most instances this information is obtained from customers, partners and users. We also purchase lists from marketing agencies and obtain information from our partners, through Cookies and social networks.**  
  
Personal information (also called personal data) is any information relating to an identified or identifiable individual. An identifiable individual is one who can be identified, directly or indirectly, in particular by reference to an identifier or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity.  
  
This Privacy Policy does not cover personal information rendered anonymous, that is if individuals are no longer identifiable or are identifiable only with a disproportionately large expense in time, cost, or labor. If anonymized data becomes identifiable, then this Privacy Policy shall apply.  
  
In most instances we collect personal information directly from users who have a business relationship with us. We may also obtain information through a reseller or a business partner, by purchasing customer lists from marketing agencies, from your online browsing experience, from social networks when you connect with these network’s credentials and through Cookies.  
  
You can find more information in section 7.

### 6.  Why do we disclose personal information to others?

**We disclose personal information to other Schneider Electric subsidiaries and to our suppliers, advertising and marketing agencies, with social networks if you use their login credentials, with other companies if you register with Schneider Electric credentials, competent regulatory bodies and authorities and business successors.**    
  
Schneider Electric is a global group of companies which works as one. To provide the best service to customers, prospects and users, personal data may be accessed by personnel working for different entities. It may be the case, for example, for customer relationship management, sales or product support, marketing, product development purposes, improvement of the products, services and digital content, data quality checks, or security, finance, regulatory and compliance purposes.  
  
We resort to supplier to carry out data processing activities and to provide our products, services and online content to you. These suppliers include, without limitation, providers of hosting facilities, information systems, advertising and marketing agencies, IT support, security services, financial services, carriers who deliver products, outside accounting firms, lawyers and auditors.  
  
We ensure all suppliers working under contract for Schneider Electric are compliant with data privacy laws and aligned with Schneider Electric guidelines.  
  
We also disclose personal information as follows:

* In connection with the provisions of our products and services, we may disclose personal information to (and receive personal information from) those partners that provide product or service functionality.  For example, we may partner with companies to integrate smart home functionality into our smart home hardware products. These disclosures are necessary for you to utilize the products and features.
* In connection with the provision of advertising, we may share some limited personal information (e.g. device identifiers, Cookie identifiers) with ad exchanges or agencies that manage advertising on third-party websites and apps on which you may see advertising. You can restrict this sharing by exercising Your Privacy Choices .
* You may access our digital content and/or register through login credentials of third-party websites (such as Facebook and LinkedIn). If you do so, we will be able to access some of the information you registered on these social networks, to assist you to pre-fill the registration form for Schneider Electric digital content. By using the login credentials of these third-party websites, you may at the same time inform your contacts on these sites that you have created an account with Schneider Electric. If you want to know more about the information accessible by your contacts on these sites and how to restrict their communication, we encourage you to read their terms of use and privacy policies.
* Schneider Electric may disclose your personal information as necessary to potential buyers and successors in title, to facilitate a merger, consolidation, transfer of control or other corporate reorganization in which Schneider Electric participates.
* In other ways described in this Privacy Policy or to which you have otherwise consented.
* Aggregated with other information, in such a way that your identity cannot reasonably be determined (for example, statistical compilations).

You can find more information in section 7.

We will not sell or rent your personal information for monetary consideration to a third party without your permission.

### 7. Categories of personal information, purposes and disclosures

| **Category of Personal Information, Representative Data Elements and Sources** | **Purpose for Collecting and Sharing the PI** | **Categories of Entities to whom this type of Personal Information is Disclosed for a Business Purpose** |
| --- | --- | --- |
| Contact Information   * Name * Username * Mailing address * Email address * Telephone number * Mobile number   We collect this type of information from:   * You * Third parties, such as companies that help us maintain the accuracy of our data and data aggregators that help us complete and enhance our records   We may obtain business contact information from data aggregators and other entities services, such as LinkedIn, event and trade shows, and our commercial customers. | We use this type of information to identify you and communicate with you, including:   * To send transactional/operational messages (such as confirmations, or delay in deliveries) * To register and manage your account * To send marketing communications, surveys (satisfactory and marketing), and invitations to our digital/physical events * To support corporate transactions or reorganizations * To personalize our communications and provide customer service * For our Everyday Business Purposes | We may disclose this type of information to our Subsidiaries and to Service Providers, including to social media companies that use the data only to identify which of our customers use their platforms so that we can deliver ads to you on the platform.   * Companies that deliver our communications, such as the postal service and couriers * Companies that assist us with address hygiene and fulfillment * Other entities as required by law |
| Relationship information We collect personal information about business professionals associated with our commercial customers, suppliers and partners in the context of our relationships we have with these companies. This includes:   * Information about your authority to use our products and place orders with us * Professional interests and credentials * Relationship information, including marketing and communication preferences * Business interests and preferences (product, contact, marketing) * Opportunity information (description, category, stage…) * Visitor logs * Loyalty and rewards program data * Household demographic data, including census data * Data from social media profiles   We collect this type of information from you and from your company. We may receive your data from other entities, such as trade associations or trade shows. | We use this type of information:   * To fulfill our business relationship with you and/or our client * To develop and maintain our relationship with you and our client, including sending your marketing communications as permitted by law and subject to your preferences * To better understand you and to understand our customers generally * For product and service development and improvement * To identify prospective customers * For internal business purposes, such as finance, quality control, training, reporting and analytics * For risk management, fraud prevention and similar purposes * For recordkeeping and compliance, including dispute resolution | We may disclose this type of information to our Subsidiaries and Service Providers and to:   * Companies with whom we have joint marketing and similar arrangements * Companies as needed to complete the transaction, including delivery companies, agents and manufacturers * Our lawyers, auditors and consultants * Customers, in connection with their audits of Schneider Electric * Other entities as required by law |
| Transaction and Interaction Information   * Account information and related records, including purchase history, payment information and history * Records related to use of our websites and apps * Records related to use of our products and devices Authentication data (passwords, account security questions) * Customer service records * Visitor logs   We collect this type of information from:   * You or your company * Third parties that process transactions for us, such as resellers and sales agents * Automatically, such as from connected devices | We use this type of information:   * To fulfill our business relationship with you, including customer service * For recordkeeping and compliance, including dispute resolution * For internal business purposes, such as finance, quality control, training, reporting and analytics * For risk management, fraud prevention and similar purposes * For our Everyday Business Purposes | We may disclose this type of information to our Subsidiaries and Service Providers and to:   * Companies with whom we have joint marketing and similar arrangements * Companies as needed to complete the transaction, including delivery companies, agents and manufacturers * Our lawyers, auditors and consultants * Customers, in connection with their audits of Schneider Electric * Other entities as required by law |
| Inferred and Derived Information   * Propensities, attributes and/or scores generated by internal analytics programs   We create inferred and derived data elements by analyzing our relationship and transactional information. | We combine inferred data with other relationship information and use this type of information:   * To better understand you and to understand our customers generally * For product and service development and improvement * For internal business purposes, such as quality control, training and analytics * For our Everyday Business Purposes | We may disclose this type of information to our Subsidiaries and Service Providers and to:   * Companies with whom we have joint marketing arrangements * Our lawyers, auditors and consultants * Other third parties as required by law |
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| IoT and Sensor data   * Commands, usage and other data collected, computed or produced by smart home and connected products (such as home automation, energy management, safety and security, and electrical products) and their associated apps * Diagnostics data (such as context and description of detected errors) Geolocation data * We collect this type of information automatically from your connected devices. | We use this type of information:   * To provide the services * To improve and modify product, and create any new products, services and solutions, * To generate business and/or sales with you * To allow compliance and/or enforcement of legal requirements. * To enable product functionality * For internal business purposes, such product development, security, and quality control * For relationship purposes, including analytics regarding product usage * For our Everyday Business Purposes | We may disclose this type of information to our Subsidiaries and Service Providers, to:   * Companies that assist with our information technology and security programs, including network security services and cybersecurity consortia * Companies that assist with fraud prevention, detection and mitigation * Other companies, such as technology partners, as needed to complete the transactions including entities that provide products and services that you connect with ours * Our lawyers, auditors and consultants * Other entities as required by law |
| Audio Visual Information We collect this type of information from:   * Photographs • Video images • CCTV recordings • Call center recordings and call monitoring records Voicemails * We collect this type of information from: * You * Automatically, such as when we record calls to our call center and use CCTV cameras in our facilities. * Third parties that provide access to photos and videos you make publicly available, such as on social media | We use this type of information:   * For internal business purposes, such as call recordings used for training, coaching or quality control * For relationship purposes, such as use of photos and videos for social media purposes * For premises security purposes and loss prevention * For our Everyday Business Purposes | We may disclose this type of information to our Subsidiaries and Service Providers and to:   * Companies that assist with our information technology and security programs, and our loss prevention programs * Our lawyers, auditors and consultants * Other entities as required by law |
| Compliance data We collect this type of information from:   * Compliance program data, such as records maintained to demonstrate compliance with applicable laws * Product safety data and other regulatory information * Records related to consumer preferences, such as your opt-ins and opt-outs of marketing programs * Records related to CCPA rights requests   We collect this type of information from:   * You * Third parties, including companies that help us conduct internal investigations * Third parties, such as consumer reporting agencies and data aggregators who conduct background screening for us | We use this type of information:   * To comply with and demonstrate compliance with applicable laws * For legal matters, including litigation and regulatory matters, including for use in connection with civil, criminal, administrative, or arbitral proceedings, or before regulatory or self-regulatory bodies, including service of process, investigations in anticipation of litigation, execution or enforcement of judgments and orders * For internal business purposes, such as risk management, audit, internal investigations, reporting, and analytics * For our Everyday Business Purposes | We may disclose this type of information to our Subsidiaries and Service Providers and to:   * Our lawyers, auditors and consultants. * Regulators, customers and other third parties, in connection with their audits of Schneider Electric * Other entities (including government agencies, courts and opposing law firms, consultants, process servers and parties to litigation) in connection with legal matters |

### 8. Your content

**You may choose to contribute content, including photos or comments, to online forums, applications or other digital platforms operated by Schneider Electric. Your content must be harmless. It must respect the law, the rights and interests of others. You need to have obtained consent before sharing someone else’s data. You should apply caution before sharing information in a forum.**  
  
The content provided to us must respect the rights and interests of others, including their rights to protection of personal information and privacy. It should not be offensive, disrespectful or be harmful in any way.  
  
Any provision of personal information to Schneider Electric about another individual must be compliant with privacy laws, including with notice and consent requirements for the disclosure of that information.  
  
While Schneider Electric strives to protect your personal information, providing it online on shared forums is not risk-free. If you post, comment, indicate interest, or share personal information, including photographs, to any forum, social network or blog, please be aware that any personal information you submit can be read, viewed, collected, or used by other users of these forums, and could be used to contact you, send you unsolicited messages, or for purposes that neither you nor Schneider Electric have control over. Schneider Electric is not responsible for the personal information you choose to submit in these forums. You should apply caution before deciding to share information about yourself or another person.

### 9. How do we protect personal information?

**Schneider Electric complies with widely recognized key data protection principles (fairness, purpose limitation, data quality, data retention, compliance with individuals’ rights, security) and takes reasonable measures for the security of personal information.**  
  
Schneider Electric respects the privacy rights and interests of individuals. Schneider Electric and its subsidiaries observe the following principles when processing personal information:

1. Processing personal information fairly and lawfully;
2. Collecting personal information for specified, legitimate purposes and not processing it further in ways incompatible with those purposes;
3. Collecting personal information which is relevant to and not excessive for the purposes for which it is collected and used. We may render information anonymous when feasible and appropriate, depending on the nature of the data and the risks associated with the intended uses;
4. Maintaining accurate personal information, and where necessary, kept up-to-date. We will take reasonable steps to rectify or delete information that is inaccurate or incomplete;
5. Keeping personal information only as long as it is necessary for the purposes for which it was collected and processed;
6. Processing personal information in accordance with individuals’ legal rights;
7. Taking appropriate technical, physical, and organizational measures to prevent unauthorized access, unlawful processing, and unauthorized or accidental loss, destruction, or damage to personal information;
8. When processing sensitive personal information, ensuring appropriate notice and consent or that the processing otherwise complies with applicable law;

Schneider Electric and all its subsidiaries must ensure that the above principles are complied with.  
  
Schneider Electric and its subsidiaries are committed to taking commercially reasonable technical, physical, and organizational measures to protect personal information against unauthorized access, unlawful processing, accidental loss or damage, and unauthorized destruction. We offer the use of secure servers to enable you to place orders or to access your account information. We implement access control measures for our internal systems that hold personal information. Authorized users are given access to such systems through the use of a unique identifier and password. Access to personal information is provided to our staff for the sole purpose of performing their job duties. We sensitize our employees on proper use and handling of personal information. We also require our service providers to maintain compliant security measures. We implement security measures to determine the identity of registered users, so that appropriate rights and restrictions can be enforced for these users. In case of a registered user, we use both log ins and passwords for authentication. You are responsible for maintaining the security of your log-in credentials.  
  
Schneider Electric will retain your personal information for as long as the information is needed for the purposes for which it was collected and for any additional period that may be required or permitted by law, such as for business, legal, accounting, or reporting requirements. The length of time your personal information is retained depends on the purpose(s) for which it was collected, how it is used, and the requirements to comply with applicable laws, regulations or contracts.    
  
More precise information is provided in privacy notices applicable to specific digital content. In general data retention periods are determined taking into consideration:

* The duration of our relationship (e.g., contract performance duration, account de-activation, your legitimate need to be recognized when contacted by us)
* Legal requirements for keeping data
* Statute of limitations

For marketing purposes, we keep relevant customer data for three years after the end of our relationship or since the last interaction with us.  
  
By using our digital content or providing personal information to us, you agree that we may communicate with you electronically or otherwise about related security, privacy, use and administrative activities.  
In spite of our efforts to implement appropriate security measures, online browsing carries inherent risks and we cannot guarantee that it is risk-free.

### 10. Third-party websites and social media

**You should read the privacy policy of third-party websites and social media and adjust privacy settings as you see fit. Non-Schneider Electric websites and platforms are not covered by this Privacy Policy.**  
  
Schneider Electric digital platforms may provide links to third-party applications, products, services, or websites for the user convenience and information. If you access those links, you will leave the Schneider Electric digital platform. Schneider Electric does not control those third-party sites or their privacy practices, which may differ from Schneider Electric’s practices. We do not endorse or make any representations about third-party sites. The personal information you choose to provide or that is collected by, these third parties are not covered by the Schneider Electric Privacy Policy. We encourage you to review the privacy policy of any site you interact with, before allowing the collection and use of your personal information.  
  
We also provide social media links that enable you to share information with your social networks and to interact with Schneider Electric on various social media sites. The use of these links may result in the collection or sharing of information about you. We encourage you to review the privacy policies and the privacy settings of the social media sites with which you interact to make sure you understand the information that may be collected, used, and shared by those sites and to adjust these settings as you see fit.

### 11. Your Privacy Choices

**Schneider Electric will comply with your data protection rights as applicable, including your rights to request access to your personal information and to request that it be deleted or amended. You can always opt out of any direct marketing activity performed by Schneider Electric.**  
  
This section tells you how to exercise your data protection rights, as applicable under relevant data protection laws, with respect to the personal information that we collect for our own business purposes. If we are processing your information as a service provider for another company, you will need to contact that company to exercise your rights:

* **Access requests**. You have the right to request a copy of the personal information that Schneider Electric maintains about you. To exercise this right, [please click here for our privacy request portal](https://privacyportal-eu.onetrust.com/webform/561c6e8f-10f4-45d2-bb12-430636ddb5e6/8be04d15-c000-4f03-aa4f-7349f4f9cf9c),
* **Correction requests**. You have the right to request that we update or correct your personal information.  To exercise this right, [please click here for our privacy request portal](https://privacyportal-eu.onetrust.com/webform/561c6e8f-10f4-45d2-bb12-430636ddb5e6/8be04d15-c000-4f03-aa4f-7349f4f9cf9c) and provide information about the correction that you wish us to make. We will process your request as required by law.
* **Deletion requests**. You have the right to request that we delete or anonymize your personal information.  To exercise this right, [please click here for our privacy request portal](https://privacyportal-eu.onetrust.com/webform/561c6e8f-10f4-45d2-bb12-430636ddb5e6/8be04d15-c000-4f03-aa4f-7349f4f9cf9c) . We will process your request as required by law. Please understand that Schneider Electric cannot delete personal information in those situations where our retention is required for our Schneider Electric’s internal business purposes or otherwise permitted by law (such as for fraud prevention or legal compliance).
* **Inquiries and complaints**. You have the right to ask us about our privacy practices or to lodge a complaint if you believe that we have violated your privacy rights or failed to properly secure your personal information. To exercise these rights, please email your specific question or concern to DPO@schneider-electric.com.
* **Right to Opt-Out**.  Subject to applicable laws, you have the right to opt out of certain types of processing, including:
  + to opt-out of the “sale” (as such term is defined under applicable law) of your personal information. However, Schneider Electric does not sell your personal information for monetary consideration.
  + to opt-out of online targeted advertising and the “sharing” of personal information for cross-contextual behavioral targeting: You can exercise this right by adjusting your browser settings (see our section How to control Cookies in Schneider Electric Cookie Notice) and [setting your cookie preferences here](https://www.se.com/us/en/about-us/legal/data-privacy.jsp).
  + to opt-out of any processing of personal information for purposes of making decisions that produce legal or similarly significant effects. However, Schneider Electric does not use any profiling or automated decision-making tools that significantly affect individuals. You would be given notice of any such activity.
  + to opt-out of emails, click the link labeled “unsubscribe” at the bottom of any email we send you or to revoke permissions that you may have given to send text messages, text STOP in response to any message.

If you have more than one email address or if you have changed your email address, please email [Global-Data-Privacy@schneider-electric.com](mailto:Global-Data-Privacy@schneider-electric.com) for assistance with changing your marketing preferences. Also, please note that even if you opt-out of commercial emails, we may still need to contact you with important transactional/operational information in relation to our relationship.

* **Limit the use of your sensitive personal information**: California residents have the right to limit secondary uses and disclosures of sensitive personal information. In general, Schneider Electric only uses and discloses sensitive personal information as needed to fulfill the purpose for which it was collected.  However, if you have provided sensitive personal information to us, you may ask us to delete it using the process above.

In some cases, we may need to contact you to verify your identity and to obtain documentation to support your request.  
  
Our websites also recognize Global Privacy Control signals if you are based in California or Virginia and will respect your opt-out request if it provided by your browser  
  
**California residents: please read the Important Information for California Residents for specific information about your California Privacy Rights and for alternative methods for submitting California Privacy Rights requests.**  
  
Country-specific sections may supplement this section.

### 12. Important information for California residents

Schneider Electric in the USA is providing this supplemental privacy notice to give California residents the additional information required by the California Consumer Privacy Act (the “CCPA”).  
  
Schneider Electric is primarily focused on serving business and professional customers, however do collect consumer data from individuals who provide it to us via our online forms or by otherwise interacting with our websites or apps.  We also receive consumer data in connection with our smart home products.  This supplemental privacy notice explains how we comply with the CCPA for consumer and business professional information.

### 12.1 CCPA Rights

The CPRA provides California residents with specific privacy rights:

* The right to know what personal information and sensitive personal information we collect
* The right to access your personal information
* The right to correct inaccurate personal information
* The right to request that we delete your personal information
* The right to know what categories of personal information are sold to third parties and to opt-out of that sale
* The right to know what categories of personal information are shared with third parties for cross-contextual behavioral targeting and to opt-out that sharing
* The right to limit the use and disclosure of sensitive personal information, and
* The right not to be retaliated against for exercising your privacy rights

### 12.2 How to Exercise Your Privacy Choices?

If you are a California resident, you may exercise your rights or authorize another person to act on your behalf by:

* Clicking here:  [Your Privacy Choices](https://privacyportal-eu.onetrust.com/webform/561c6e8f-10f4-45d2-bb12-430636ddb5e6/8be04d15-c000-4f03-aa4f-7349f4f9cf9c)
* Calling Schneider Electric at 800-789-3508
* Emailing us: Global-Data-Privacy@schneider-electric.com

Please note that we will need to verify your identity before we can fulfill your request. Because the information that we maintain subject to CCPA generally consists of marketing information, we will generally verify your identity using your email address. We will respond to requests using the email address that is associated with the information we maintain.  
  
If you are exercising CPRA access or deletion rights on behalf of another person, please understand that what will need to verify your authority with the person you seek to represent.  
  
If you would like to designate an agent, please send an email from your own email address to [Global-Data-Privacy@schneider-electric.com](mailto:Global-Data-Privacy@schneider-electric.com) indicating the name and email address of your agent. We will respond to that person’s requests using both your email address and the agent’s email address.  
  
Please understand that your rights are subject to some limitations. If you request that we delete your personal information, we will do so except in those situations where our retention is required for our internal business purposes, to finalize the ongoing business operations we have we you, to log your request or otherwise permitted by CCPA (such as for fraud prevention or legal compliance). In these situations, we will retain your information in accordance with our records retention program and securely delete it at the end of the retention period.  
  
Additionally, please note that many companies sell and install Schneider Electric products.  We do not operate these companies, and we do not have any access to their databases.  If you have registered with or purchased Schneider Electric products from another company, please contact that company directly to exercise your CCPA rights.

### 12.3 Financial Incentives

Schneider Electric collects personal information in order to deliver offers and promotions and to enable loyalty programs. While we cannot calculate the precise value of your information to us, our offers and incentives generally reflect the value of the relationships that we have with the individuals who participate in the program.   
  
We will not discriminate against you if you exercise your rights under CCPA. However, if you ask us to delete your information, you will not be able to receive additional offers or promotions. Any offers or promotions sent to you previously will continue to be honored according to their original terms.

### 12.4 Sensitive Personal Information

Schneider Electric uses and discloses the following categories sensitive personal information.  We do not process any sensitive personal information for the purpose of informing characteristics about you.

| **Category of Sensitive Personal Information** | **Purposes for Use and Disclosure** | **Can I limit this Use and Disclosure?** |
| --- | --- | --- |
| Government-issued Identification Numbers | We use and disclose Government-issued Identification Numbers in connection with payments made to professionals, for tax reporting and compliance. | No |
| Account log-in credentials | We use and disclose Account Access Information as needed to allow you to access your account, for account security purposes. | No |
| Financial account or payment card numbers | We use and disclose financial account and payment card numbers as needed to process transactions | No |
| Precise Geolocation Data | We may collect precise geolocation data in order to provide specific functionality related to the services. We also use it to deliver content to you based on your location. | Yes |
| Race or Ethnicity Disability Status Sexual Orientation | If you provide this information to us, we use and disclose these data elements in connection with our supplier diversity programs. | No |

We do not collect other categories of sensitive personal information, such as biometric identifiers, the contents of mail, email or texts, or other non -public information about your race, ethnicity, health, sex life or sexual orientation.

1. Personal information of children under 16 cannot be sold or shared without affirmative consent.
2. Schneider Electric’s Subsidiaries are companies that are directly or indirectly controlled by Schneider Electric SE.
3. ***Everyday Business Purposes*** encompasses the Business Purposes (as defined in the CCPA) and following related purposes for which personal information may used:
   * To provide the information, product or service requested by the individual or as reasonably expected given the context in which with the personal information was collected (such as customer credentialing, providing customer service, personalization and preference management, providing product updates, bug fixes or recalls, and dispute resolution);
   * For identity and credential management, including identity verification and authentication, and system and technology administration;
   * To protect the security and integrity of systems, networks, applications and data, including detecting, analyzing and resolving security threats, and collaborating with cybersecurity centers, consortia and law enforcement about imminent threats;
   * For fraud detection and prevention;
   * For legal and regulatory compliance, including all uses and disclosures of personal information that are required by law or reasonably needed for compliance with company policies and procedures, such as: anti-money laundering programs, security and incident response programs, intellectual property protection programs, and corporate ethics and compliance hotlines;
   * For corporate audit, analysis and reporting;
   * To enforce our contracts and to protect against injury, theft, legal liability, fraud or abuse, and to protect people or property, including physical security programs;
   * To de-identify the data or create aggregated datasets, such as for consolidating reporting, research or analytics;
   * To make back-up copies for business continuity and disaster recovery purposes; and
   * For corporate governance, including mergers, acquisitions and divestitures.

* Technical Expert Assessment (TEX) Request Form
* Rev. 01-00
* Internal
* Date:
* Case started already? If yes, please provide: Case #:
* Material Returned already? If yes, please provide: CNI/RMA #: Shipping Carrier & Tracking #:
* Material Exchanged already? If yes, please indicate at the bottom if we should return the material after analysis if credit is denied.
* Communication Preference
* Preferred Method of Contact:
* Email
* Phone
* Preferred Frequency:
* Daily
* Weekly
* Bi-Weekly
* Milestones
* Only if Delay
* Check the box next to who is to be the primary contact for communication.
* End User Information
* Distributor or OEM Information
* Company Name:
* Address:
* City:
* State:
* Zip:
* Customer Contact:
* Phone #:
* Email Address:
* Company Name:
* Address:
* City:
* State:
* Zip:
* Account #:
* Distributor/ OEM Contact:
* Phone #:
* Email Address:
* Technical Contact or Site Contact Information
* *(to provide technical detail about inoperative product)*
* Schneider Electric Representative Information
* Company Name:
* Address:
* City: State: Zip:
* Technical Contact:
* Phone #:
* Email Address:
* Name: Field Sales Rep?
* Location:
* Phone #:
* Email Address:
* Product Information
* Who should receive a copy of the analysis report?
* *Check all that apply*
* Q2C # / SO #:
* Quantity:
* PO #:
* Check box if material is in warranty
* Catalog/Part #:
* Series #:
* Return item if credit is denied?
* Serial # / Date Code:
* Yes
* No
* End User
* Distributor/ OEM
* Other
* Technical Contact Email:
* SE Contact
* Our Technical Support Team will contact the “Technical Contact” listed above to obtain detailed information regarding the inoperative
* product. Please provide a brief description below so that we understand the nature of your request.
* Issue/Problem Description
* *Please include where product is used (application)*
* **Technical Expert Assessment (TEX) Report Request Form**Top of Form

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Documentation

**Technical documentation**

Search for in-depth articles on Microsoft developer tools and technologies.

Top of Form



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Index

**Product directory**

Explore guides and articles by product.

* [.NET](https://learn.microsoft.com/en-us/dotnet/)
* [.NET MAUI](https://learn.microsoft.com/en-us/dotnet/maui/)
* [Adaptive Cards](https://learn.microsoft.com/en-us/adaptive-cards/)
* [ASP.NET Core](https://learn.microsoft.com/en-us/aspnet/core/)
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* [Dynamics 365 Customer Insights](https://learn.microsoft.com/en-us/dynamics365/customer-insights/)
* [Dynamics 365 Customer Service](https://learn.microsoft.com/en-us/dynamics365/customer-service/)
* [Dynamics 365 Field Service](https://learn.microsoft.com/en-us/dynamics365/field-service/)
* [Dynamics 365 Finance](https://learn.microsoft.com/en-us/dynamics365/finance/)
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* [Dynamics 365 Supply Chain Management](https://learn.microsoft.com/en-us/dynamics365/supply-chain/)
* [Java](https://learn.microsoft.com/en-us/java/)
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* [Microsoft Advertising](https://learn.microsoft.com/en-us/advertising/)
* [Microsoft Cloud](https://learn.microsoft.com/en-us/microsoft-cloud/)
* [Microsoft Compliance](https://learn.microsoft.com/en-us/compliance/)
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* [Microsoft Copilot Studio](https://learn.microsoft.com/en-us/microsoft-copilot-studio/)
* [Microsoft Defender](https://learn.microsoft.com/en-us/defender/)
* [Microsoft Edge](https://learn.microsoft.com/en-us/microsoft-edge/)
* [Microsoft Entra](https://learn.microsoft.com/en-us/entra/)
* [Microsoft Fabric](https://learn.microsoft.com/en-us/fabric/)
* [Microsoft Graph](https://learn.microsoft.com/en-us/graph/)
* [Microsoft Industry Clouds](https://learn.microsoft.com/en-us/industry/)
* [Microsoft Intune](https://learn.microsoft.com/en-us/mem/)
* [Microsoft Lifecycle Policy](https://learn.microsoft.com/en-us/lifecycle/)
* [Microsoft Mesh](https://learn.microsoft.com/en-us/mesh/)
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* [Microsoft Purview](https://learn.microsoft.com/en-us/purview/)
* [Microsoft Security](https://learn.microsoft.com/en-us/security/)
* [Microsoft Stream](https://learn.microsoft.com/en-us/stream/)
* [Microsoft Surface](https://learn.microsoft.com/en-us/surface/)
* [Microsoft Teams](https://learn.microsoft.com/en-us/microsoftteams/)
* [Microsoft Typography](https://learn.microsoft.com/en-us/typography/)
* [Microsoft Viva](https://learn.microsoft.com/en-us/viva/)
* [OData](https://learn.microsoft.com/en-us/odata/)
* [Open Specifications](https://learn.microsoft.com/en-us/openspecs/)
* [OpenAPI](https://learn.microsoft.com/en-us/openapi/)
* [Partner Center](https://learn.microsoft.com/en-us/partner-center/)
* [PlayReady](https://learn.microsoft.com/en-us/playready/)
* [Power Apps](https://learn.microsoft.com/en-us/power-apps/)
* [Power Automate](https://learn.microsoft.com/en-us/power-automate/)
* [Power BI](https://learn.microsoft.com/en-us/power-bi/)
* [Power Pages](https://learn.microsoft.com/en-us/power-pages/)
* [Power Platform](https://learn.microsoft.com/en-us/power-platform/)
* [Power Query M](https://learn.microsoft.com/en-us/powerquery-m/)
* [PowerShell](https://learn.microsoft.com/en-us/powershell/)
* [Semantic Kernel](https://learn.microsoft.com/en-us/semantic-kernel/)
* [SharePoint](https://learn.microsoft.com/en-us/sharepoint/)
* [SQL Server](https://learn.microsoft.com/en-us/sql/)
* [System Center](https://learn.microsoft.com/en-us/system-center/)
* [Sysinternals](https://learn.microsoft.com/en-us/sysinternals/)
* [Vcpkg](https://learn.microsoft.com/en-us/vcpkg/)
* [Visual Studio](https://learn.microsoft.com/en-us/visualstudio/)
* [Windows](https://learn.microsoft.com/en-us/windows/)
* [Windows Server](https://learn.microsoft.com/en-us/windows-server/)

**Recommended Resources**

* [**Startups**](https://www.microsoft.com/en-us/startups)

Get your businesses up and running with the Microsoft Cloud, growing your startup while ensuring security and compliance for your customers.

* [**Student Hub**](https://learn.microsoft.com/en-us/training/student-hub/)

Learn technical skills to prepare you for your future. Find training, virtual events, and opportunities to connect with the Microsoft student developer community.

* [**Educator Center**](https://learn.microsoft.com/en-us/training/educator-center/)

Dive deep into learning with interactive lessons, earn professional development hours, acquire certifications and find programs that help meet your goals.

* [**Microsoft Learn Blog**](https://techcommunity.microsoft.com/t5/microsoft-learn-blog/bg-p/MicrosoftLearnBlog)

Get the latest updates, articles, and news for learning content and events from the Microsoft Learn community.

* [**Virtual Training Days**](https://www.microsoft.com/en-us/trainingdays)

Take advantage of free Virtual Training Days, where participants of any skill level can build technical skills across a range of topics and technologies.

* [**Microsoft R**](https://developer.microsoft.com/en-us/reactor/)

[Skip to main content](https://learn.microsoft.com/en-us/plans/kozzh2tww8xw74#main)

[Learn](https://learn.microsoft.com/en-us/)

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Success! Your plan has been saved to your [profile](https://learn.microsoft.com/users/me/activity/).

Plan

# Discover Data Concepts and Implement Solutions with Microsoft Fabric

3 milestones

This plan covers data discovery, classification, and protection, alongside implementing data warehouses using Microsoft Fabric. You'll learn key technologies like Azure and Microsoft Fabric, and tasks such as data management and analytics.

* Edited on 8/18/2025
* Created by [tshingombe tshitadi](https://learn.microsoft.com/en-us/users/tshingombetshitadi-5294/) with AI on Microsoft Learn

Learning outcomes

* By the end of this plan, you'll be able to identify and apply core data concepts and roles in data management.
* By the end of this plan, you'll be able to implement a data warehouse using Microsoft Fabric, including loading and querying data.
* By the end of this plan, you'll be able to utilize Microsoft Purview for data discovery and protection.
*  

### Skills earned upon completion

## 3 milestones in this plan

Milestone 1

Progress:

0%

### Understand data concepts and core data principles

Learn fundamental data concepts, analytics, and roles using Microsoft Azure and SQL Server. This section covers data discovery, classification, and protection, essential for effective data management.

Days to milestone: 1

* Learning Path

[Understand data concepts](https://learn.microsoft.com/en-us/training/paths/understand-data-concepts/?ns-enrollment-type=Collection&ns-enrollment-id=odxxbgtmdyzzkd)

* + 3 modules
  + 1 hr 34 min

   Learning Path

[Introduction to Microsoft Azure Data core data concepts](https://learn.microsoft.com/en-us/training/paths/azure-data-fundamentals-explore-core-data-concepts/?ns-enrollment-type=Collection&ns-enrollment-id=odxxbgtmdyzzkd)

* 2 modules
* 59 min
* 

Milestone 2

Progress:

0%

### Implement data warehousing solutions with Microsoft Fabric

Explore the data warehousing process using Microsoft Fabric. Learn to load, monitor, secure, and query data warehouses, enhancing your data management skills.

Days to milestone: 3

* Learning Path

[Implement a data warehouse with Microsoft Fabric](https://learn.microsoft.com/en-us/training/paths/work-with-data-warehouses-using-microsoft-fabric/?ns-enrollment-type=Collection&ns-enrollment-id=odxxbgtmdyzzkd)

* + 6 modules
  + 5 hr 57 min

Implement a data warehouse with Mi...

    Learning Path

[Get started with Microsoft Fabric](https://learn.microsoft.com/en-us/training/paths/get-started-fabric/?ns-enrollment-type=Collection&ns-enrollment-id=odxxbgtmdyzzkd)

* 10 modules
* 10 hr 31 min
*  

Milestone 3

Progress:

0%

### Support data protection and cybersecurity solutions

Understand how Microsoft supports data discovery, classification, and protection in cybersecurity. This section focuses on essential data protection capabilities within M365 and Azure.

Days to milestone: 1

* Learning Path

[Learn how Microsoft supports data discovery, classification, and protection as part of a cybersecurity solution](https://learn.microsoft.com/en-us/training/paths/data-identification-cybersecurity/?ns-enrollment-type=Collection&ns-enrollment-id=odxxbgtmdyzzkd)

* + 2 modules
  + 1 hr 50 min
* 
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*      

Plan

# Discover Data Concepts and Implement Solutions with Microsoft Fabric (2)

3 milestones

This plan covers data discovery, classification, and protection, alongside implementing data warehouses using Microsoft Fabric. You'll learn key technologies like Azure and Microsoft Fabric, and tasks such as data management and analytics.RESEARCH BACKGROUND & CAREER PORTFOLIO Title: Digital Automation and Engineering Documentation Using VBA Macros and Form Controls Author: Tshingombe Tshitadi Fiston Institution: St Peace College / City Power / DBE / DHET Field: Engineering Education, Digital Systems, Technical Training Portfolio Theme: Integra

* Edited on 8/18/2025
* Created by [tshingombe tshitadi](https://learn.microsoft.com/en-us/users/tshingombetshitadi-5294/)

Learning outcomes

* By the end of this plan, you'll be able to identify and apply core data concepts and roles in data management.APPLICATIONS & IMPACT 🏫 Institutional Use • DBE and DHET curriculum mapping • ISITA and Umalusi assessment compliance • City Power and Eskom technical training modules • TVET college portfolio standardization 💼 Career Development • Portfolio for job applications and internships • Evidence of technical and digital competency • Integration with GitHub for code versioning • Alignment with NATED and engineering qualifications Would you li
* By the end of this plan, you'll be able to design and implement a VBA macro-driven workbook that automates: • Student registration and assessment tracking • Engineering drawing analysis and documentation • PLC command simulation and device interfacing • Portfolio generation for career readiness 2️⃣ VBA MACRO & FORM CONTROL SYSTEM 🔧 Key Modules Macro Purpose reset\_form() Clears form fields, initializes default values, saves workbook Macro2() Operates calculatimplement a data warehouse using Microsoft Fabric, including loading and querying data.
* By the end of this plan, you'll be able to utilize Microsoft Purview for data discovery and protectionVBA FORM CONTROL SYSTEM OVERVIEW Project Title: Multi-Form VBA Interface for Engineering Documentation and Student Record Automation Author: Tshingombe Tshitadi Fiston Platform: Microsoft Excel + VBA + MSForms Use Case: Engineering education, student records, PLC simulation, project documentation 🔧 SYSTEM ARCHITECTURE Your code spans multiple UserForms, Modules, and Event Handlers, each serving a specific function: 🗂️ UserForms Breakdown For.
*  

### Skills earned upon completion

## 3 milestones in this plan

Milestone 1

Progress:

0%

### Implement data warehousing solutions with Microsoft Fabric

Explore the data warehousing process using Microsoft Fabric. Learn to load, monitor, secure, and query data warehouses, enhancing your data management skills.

Days to milestone: 3

* Learning Path

[Implement a data warehouse with Microsoft Fabric](https://learn.microsoft.com/en-us/training/paths/work-with-data-warehouses-using-microsoft-fabric/?ns-enrollment-type=Collection&ns-enrollment-id=j2zzc3te1ywm21)

* + 6 modules
  + 5 hr 57 min

Implement a data warehouse with Mi...

   Learning Path

[Get started with Microsoft Fabric](https://learn.microsoft.com/en-us/training/paths/get-started-fabric/?ns-enrollment-type=Collection&ns-enrollment-id=j2zzc3te1ywm21)

* 10 modules
* 10 hr 31 min
* 

Milestone 2

Progress:

0%

### Understand data concepts and core data principles

Learn fundamental data concepts, analytics, and roles using Microsoft Azure and SQL Server. This section covers data discovery, classification, and protection, essential for effective data management.

Days to milestone: 1

* Learning Path

[Understand data concepts](https://learn.microsoft.com/en-us/training/paths/understand-data-concepts/?ns-enrollment-type=Collection&ns-enrollment-id=j2zzc3te1ywm21)

* + 3 modules
  + 1 hr 34 min

    Learning Path

[Introduction to Microsoft Azure Data core data concepts](https://learn.microsoft.com/en-us/training/paths/azure-data-fundamentals-explore-core-data-concepts/?ns-enrollment-type=Collection&ns-enrollment-id=j2zzc3te1ywm21)

* 2 modules
* 59 min
*  

Milestone 3

Progress:

0%

### Support data protection and cybersecurity solutions

Understand how Microsoft supports data discovery, classification, and protection in cybersecurity. This section focuses on essential data protection capabilities within M365 and Azure.

Days to milestone: 1

* Learning Path

[Learn how Microsoft supports data discovery, classification, and protection as part of a cybersecurity solution](https://learn.microsoft.com/en-us/training/paths/data-identification-cybersecurity/?ns-enrollment-type=Collection&ns-enrollment-id=j2zzc3te1ywm21)

* + 2 modules
  + 1 hr 50 min
* 
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Plan

# Discover Data Concepts and Implement Solutions with Microsoft Fabric (3)

3 milestones

This plan covers data discovery, classification, and protection, alongside implementing data warehouses using Microsoft Fabric. You'll learn key technologies like Azure and Microsoft Fabric, and tasks such as data management and analytics.🧠 RESEARCH BACKGROUND & CAREER PORTFOLIO 2 1️⃣ RESEARCH BACKGROUND 2 2️⃣ VBA MACRO & FORM CONTROL SYSTEM 3 3️⃣ CAREER PORTFOLIO COMPONENTS 3 4️⃣ APPLICATIONS & IMPACT 3 🧾 APPLICATION CONTEXT 5 🧠 VBA FORM CONTROL SYSTEM OVERVIEW 6 🔧 SYSTEM ARCHITECTURE 6 🧠 EVENT HANDLER LOGIC 7 📁 PORTFOLIO INTEGRATION 7

* Edited on 8/18/2025
* Created by [tshingombe tshitadi](https://learn.microsoft.com/en-us/users/tshingombetshitadi-5294/)

Learning outcomes

* By the end of this plan, you'll be able to identify and apply core data concepts and roles in data man🧠 RESEARCH BACKGROUND & CAREER PORTFOLIO 2 1️⃣ RESEARCH BACKGROUND 2 2️⃣ VBA MACRO & FORM CONTROL SYSTEM 3 3️⃣ CAREER PORTFOLIO COMPONENTS 3 4️⃣ APPLICATIONS & IMPACT 3 🧾 APPLICATION CONTEXT 5 🧠 VBA FORM CONTROL SYSTEM OVERVIEW 6 🔧 SYSTEM ARCHITECTURE 6 🧠 EVENT HANDLER LOGIC 7 📁 PORTFOLIO INTEGRATION 7 🔗 NEXT STEPS 8 ⚙️ SYSTEM MODULE: VBA + ENGINEERING FAULT ANALYSIS 8 🔧 VBA UserForm3 Configuration 8 End Sub🔌 THREE-PHASE FAULT agement.
* By the end of this plan, you'll be able to implement a data warehouse using Microsoft Fabric, including loading and querying data.🧠 RESEARCH BACKGROUND & CAREER PORTFOLIO 2 1️⃣ RESEARCH BACKGROUND 2 2️⃣ VBA MACRO & FORM CONTROL SYSTEM 3 3️⃣ CAREER PORTFOLIO COMPONENTS 3 4️⃣ APPLICATIONS & IMPACT 3 🧾 APPLICATION CONTEXT 5 🧠 VBA FORM CONTROL SYSTEM OVERVIEW 6 🔧 SYSTEM ARCHITECTURE 6 🧠 EVENT HANDLER LOGIC 7 📁 PORTFOLIO INTEGRATION 7 🔗 NEXT STEPS 8 ⚙️ SYSTEM MODULE: VBA + ENGINEERING FAULT ANALYSIS 8 🔧 VBA UserForm3 Configuration 8 End Sub
* By the end of this plan, you'll be able to utilize Microsoft Purview for data discovery and protect🤖 AI/ML Deployment & Scaling in Software Engineering 48 🎓 Overview 49 Portfolio Evidence: 49 🔄 Cross-Domain Integration Strategy 49 📊 Strategic Impact 49 ⚙️ Specialist Engineering in Electrochemical Systems for Infrastructure 50 🎓 Core Modules & Strategic Themes 50 🔋 Energy Storage and Battery Technology 50 🎓 Core Modules & Strategic Themes 50 🤖 Advanced Robotic Process Automation in Electrical Engineering 51 🎓 Core Modules & Strategiion.
*  

### Skills earned upon completion

## 3 milestones in this plan

Milestone 1

Progress:

0%

### Understand data concepts and core data principles

Learn fundamental data concepts, analytics, and roles using Microsoft Azure and SQL Server. This section covers data discovery, classification, and protection, essential for effective data management.

Days to milestone: 1

* Learning Path

[Understand data concepts](https://learn.microsoft.com/en-us/training/paths/understand-data-concepts/?ns-enrollment-type=Collection&ns-enrollment-id=g7ggf3tmkn8o3n)

* + 3 modules
  + 1 hr 34 min

   Learning Path

[Introduction to Microsoft Azure Data core data concepts](https://learn.microsoft.com/en-us/training/paths/azure-data-fundamentals-explore-core-data-concepts/?ns-enrollment-type=Collection&ns-enrollment-id=g7ggf3tmkn8o3n)

* 2 modules
* 59 min
* 

Milestone 2

Progress:

0%

### Implement data warehousing solutions with Microsoft Fabric

Explore the data warehousing process using Microsoft Fabric. Learn to load, monitor, secure, and query data warehouses, enhancing your data management skills.

Days to milestone: 3

* Learning Path

[Implement a data warehouse with Microsoft Fabric](https://learn.microsoft.com/en-us/training/paths/work-with-data-warehouses-using-microsoft-fabric/?ns-enrollment-type=Collection&ns-enrollment-id=g7ggf3tmkn8o3n)

* + 6 modules
  + 5 hr 57 min

Implement a data warehouse with Mi...

    Learning Path

[Get started with Microsoft Fabric](https://learn.microsoft.com/en-us/training/paths/get-started-fabric/?ns-enrollment-type=Collection&ns-enrollment-id=g7ggf3tmkn8o3n)

* 10 modules
* 10 hr 31 min
*  

Milestone 3

Progress:

0%

### Support data protection and cybersecurity solutions

Understand how Microsoft supports data discovery, classification, and protection in cybersecurity. This section focuses on essential data protection capabilities within M365 and Azure.

Days to milestone: 1

* Learning Path

[Learn how Microsoft supports data discovery, classification, and protection as part of a cybersecurity solution](https://learn.microsoft.com/en-us/training/paths/data-identification-cybersecurity/?ns-enrollment-type=Collection&ns-enrollment-id=g7ggf3tmkn8o3n)

* + 2 modules
  + 1 hr 50 min
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**Review plan**

Required fields are marked with an asterisk

Plan

**Develop AI Solutions with Azure**

In this plan, you'll learn to implement AI solutions using Azure AI services, focusing on knowledge mining, information extraction, and developing AI agents. Key technologies include Azure AI Search and Azure AI Foundry.

Learning outcomes

* By the end of this plan, you'll be able to implement knowledge mining solutions using Azure AI Search to extract insights from data.
* By the end of this plan, you'll be able to develop AI information extraction solutions that automate data capture and enhance business processes.
* By the end of this plan, you'll be able to create and deploy AI agents using Azure AI Foundry to improve user interactions.

Estimated time to complete: 29 days

**6 milestone(s) in this plan**

Get started with Azure AI Services (1 item)

Learn the fundamentals of Azure AI Services, including key concepts and tools. This section covers getting started with AI services and foundational knowledge for further learning.

Days to milestone: 5

Get started with Azure AI Services - Training

Develop AI information extraction solutions (1 item)

Develop AI Agents on Azure (1 item)

Implement knowledge mining with Azure AI Search (1 item)

Develop generative AI apps in Azure (1 item)

Microsoft Certified: Azure AI Engineer Associate - Certifications (1 item)

Is this plan helpful?

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Plan

# Develop AI Solutions with Azure engineering dATABASE

6 milestones

In this plan, you'll learn to implement AI solutions using Azure AI services, focusing on knowledge mining, information extraction, and developing AI agents. Key technologies include Azure AI Search and Azure AI Foundry.🤖 AI/ML Deployment & Scaling in Software Engineering 48 🎓 Overview 49 Portfolio Evidence: 49 🔄 Cross-Domain Integration Strategy 49 📊 Strategic Impact 49 ⚙️ Specialist Engineering in Electrochemical Systems for Infrastructure 50 🎓 Core Modules & Strategic Themes 50 🔋 Energy Storage and Battery Technology 50 🎓 Core Modules

* Edited on 8/18/2025
* Created by [46307064](https://learn.microsoft.com/en-us/users/46307064/)

Learning outcomes

* By the end of this plan, you'll be able to implement knowledge mining solutions using Azure AI Search to extract insights from data.🤖 AI/ML Deployment & Scaling in Software Engineering 48 🎓 Overview 49 Portfolio Evidence: 49 🔄 Cross-Domain Integration Strategy 49 📊 Strategic Impact 49 ⚙️ Specialist Engineering in Electrochemical Systems for Infrastructure 50 🎓 Core Modules & Strategic Themes 50 🔋 Energy Storage and Battery Technology 50 🎓 Core Modules & Strategic Themes 50 🤖 Advanced Robotic Process Automation in Electrical Engineering
* By the end of this plan, you'll be able to develop AI information extraction solutions that automate data capture and enhance business processes.
* By the end of this plan, you'll be able to create and deploy AI agents using Azure AI Foundry to improve user interactions.
*  

### Skills earned upon completion

*  

## 6 milestones in this plan

Milestone 1

Progress:

0%

### Get started with Azure AI Services

Learn the fundamentals of Azure AI Services, including key concepts and tools. This section covers getting started with AI services and foundational knowledge for further learning.

Days to milestone: 5

* Learning Path

[Develop generative AI apps in Azure](https://learn.microsoft.com/en-us/training/paths/create-custom-copilots-ai-studio/?ns-enrollment-type=Collection&ns-enrollment-id=1n2mhotejorj8y)

* + 8 modules
  + 7 hr 29 min

Develop generative AI apps in Azur...

*    

Milestone 2

Progress:

0%

### Implement knowledge mining with Azure AI Search

Master knowledge mining techniques using Azure Cognitive Search. This section dives into implementing search solutions that leverage AI for enhanced information retrieval.

Days to milestone: 6

* Learning Path

[Implement knowledge mining with Azure AI Search](https://learn.microsoft.com/en-us/training/paths/implement-knowledge-mining-azure-cognitive-search/?ns-enrollment-type=Collection&ns-enrollment-id=1n2mhotejorj8y)

* + 8 modules
  + 6 hr 24 min
*     

Milestone 3

Progress:

0%

### Develop AI information extraction solutions

Explore how to extract information from various content types using Azure AI services. This section focuses on practical applications and techniques for information extraction.

Days to milestone: 4

* Learning Path

[Develop AI information extraction solutions in Azure](https://learn.microsoft.com/en-us/training/paths/ai-extract-information/?ns-enrollment-type=Collection&ns-enrollment-id=1n2mhotejorj8y)

* + 5 modules
  + 4 hr 18 min
*     

Milestone 4

Progress:

0%

### Develop AI Agents on Azure

Learn to create AI agents using Azure AI Foundry and Semantic Kernel. This section covers agent development techniques and frameworks for building intelligent applications.

Days to milestone: 6

* Learning Path

[Develop AI agents on Azure](https://learn.microsoft.com/en-us/training/paths/develop-ai-agents-on-azure/?ns-enrollment-type=Collection&ns-enrollment-id=1n2mhotejorj8y)

* + 7 modules
  + 6 hr 28 min
*     

Milestone 5

Progress:

0%

### Develop generative AI apps in Azure

Learn to create generative AI applications using Azure services. This section covers the development of innovative AI solutions and applications for various use cases.

Days to milestone: 7

* Learning Path

[Develop generative AI apps in Azure](https://learn.microsoft.com/en-us/training/paths/create-custom-copilots-ai-studio/?ns-enrollment-type=Collection&ns-enrollment-id=1n2mhotejorj8y)

* + 8 modules
  + 7 hr 29 min

Develop generative AI apps in Azur...

*     

Milestone 6

Progress:

0%

### Microsoft Certified: Azure AI Engineer Associate - Certifications

Days to milestone: 1

* Certification

[Microsoft Certified: Azure AI Engineer Associate - Certifications](https://learn.microsoft.com/en-us/credentials/certifications/azure-ai-engineer/?ns-enrollment-type=Collection&ns-enrollment-id=1n2mhotejorj8y)

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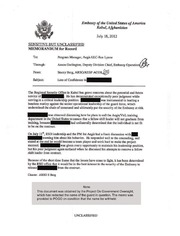
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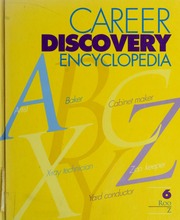
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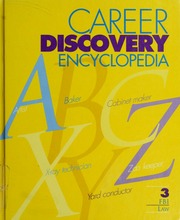
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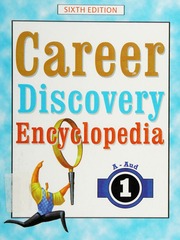
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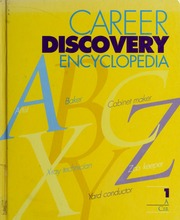
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by summerfield, carol j., 1960-

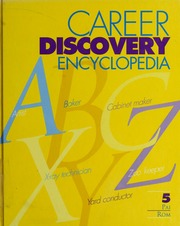
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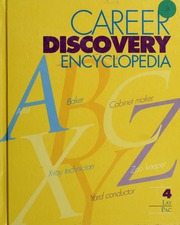
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Inbox

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| --- | --- | --- | --- | --- |
| |  | | --- | | Ruth Shuman | | | | Fri, Aug 15, 6:31 PM (3 days ago) |
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| |  |  |  | | --- | --- | --- | | |  | | --- | | to tshingombekb@gmail.cm, me, rshuman@salesforce.nsf.gov, tshingombekb@gmail.com  https://mail.google.com/mail/u/0/images/cleardot.gif | | | |  | |  | | |  | | --- | | Dear tshingombe,  Thank you for your interest in the NSF I-Corps program.  This application has been declined. The applicant does not meet the eligibility requirements. To be eligible, the core technology needs to have been developed at an accredited institution of higher education and the proposal must be submitted from an institution of higher education. Companies are not eligible to apply with the exception of current NSF Phase I grantees (if you are a Phase I grantee, please send your Phase I award number). In addition, an application requires a minimum of three team members (Entrepreneurial Lead, Technical Lead, and Industry Mentor), and include a team member that has a related and relevant prior NSF research award, or the team must have participated in a regional I-Corps program and received a Letter of Recommendation to the national program.  Thank you,  Ruth Shuman  Program Director  National Science Foundation (NSF)  2415 Eisenhower Boulevard, Alexandria, VA 22314  [rshuman@salesforce.nsf.gov](mailto:rshuman@salesforce.nsf.gov) | | |

# engineering **#5**

##   Jobs

##   Run details

[build](https://github.com/Kananga5/career-discovery-science-mentoring-and-job-experience-tshingombe-/actions/runs/17039306236/job/48298982012#logs)

succeeded Aug 18, 2025 in 7s

Top of Form

Bottom of Form

Top of Form



Bottom of Form

1s

Current runner version: '2.327.1'

Runner Image Provisioner

Operating System

Runner Image

GITHUB\_TOKEN Permissions

Secret source: Actions

Prepare workflow directory

Prepare all required actions

Getting action download info

Download action repository 'actions/checkout@v4' (SHA:08eba0b27e820071cde6df949e0beb9ba4906955)

Complete job name: build

2s

Run actions/checkout@v4

Syncing repository: Kananga5/career-discovery-science-mentoring-and-job-experience-tshingombe-

Getting Git version info

Temporarily overriding HOME='/home/runner/work/\_temp/1d454498-ff30-47ea-a73f-11437e8d732b' before making global git config changes

Adding repository directory to the temporary git global config as a safe directory

/usr/bin/git config --global --add safe.directory /home/runner/work/career-discovery-science-mentoring-and-job-experience-tshingombe-/career-discovery-science-mentoring-and-job-experience-tshingombe-

Deleting the contents of '/home/runner/work/career-discovery-science-mentoring-and-job-experience-tshingombe-/career-discovery-science-mentoring-and-job-experience-tshingombe-'

Initializing the repository

Disabling automatic garbage collection

Setting up auth

Fetching the repository

Determining the checkout info

/usr/bin/git sparse-checkout disable

/usr/bin/git config --local --unset-all extensions.worktreeConfig

Checking out the ref

/usr/bin/git log -1 --format=%H

67712c5b5cca6e751a8d54dcb9496f858218fec7

0s

Run echo Hello, world!

Hello, world!

0s

Run echo Add other actions to build,

Add other actions to build,

test, and deploy your project.

1s

Post job cleanup.

/usr/bin/git version

git version 2.50.1

Temporarily overriding HOME='/home/runner/work/\_temp/7fbf7f0d-af0f-468c-bb8d-974930b56be8' before making global git config changes

Adding repository directory to the temporary git global config as a safe directory

/usr/bin/git config --global --add safe.directory /home/runner/work/career-discovery-science-mentoring-and-job-experience-tshingombe-/career-discovery-science-mentoring-and-job-experience-tshingombe-

/usr/bin/git config --local --name-only --get-regexp core\.sshCommand

/usr/bin/git submodule foreach --recursive sh -c "git config --local --name-only --get-regexp 'core\.sshCommand' && git config --local --unset-all 'core.sshCommand' || :"

/usr/bin/git config --local --name-only --get-regexp http\.https\:\/\/github\.com\/\.extraheader

http.<https://github.com/.extraheader>

/usr/bin/git config --local --unset-all http.<https://github.com/.extraheader>

/usr/bin/git submodule foreach --recursive sh -c "git config --local --name-only --get-regexp 'http\.https\:\/\/github\.com\/\.extraheader' && git config --local --unset-all 'http.<https://github.com/.extraheader>' || :"

0s

Cleaning up orphan processes[Kananga5](https://github.com/Kananga5)

[data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-)

 [Code](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-)



 [Issues](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/issues)



 [Pull requests](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/pulls)



 [Actions](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/actions)



 [Projects](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/projects)



 [Wiki](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/wiki)



 [Security](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/security)



 [Insights](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/pulse)



* [Settings](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/settings)

[CI](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/actions/workflows/blank.yml)

**engineering** #3

**  Jobs**

**  Run details**

[build](https://github.com/Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/actions/runs/17039851330/job/48300705363#logs)

succeeded Aug 18, 2025 in 5s

Top of Form

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Top of Form



Bottom of Form

1s

Current runner version: '2.327.1'

Runner Image Provisioner

Operating System

Runner Image

GITHUB\_TOKEN Permissions

Secret source: Actions

Prepare workflow directory

Prepare all required actions

Getting action download info

Download action repository 'actions/checkout@v4' (SHA:08eba0b27e820071cde6df949e0beb9ba4906955)

Complete job name: build

3s

Run actions/checkout@v4

Syncing repository: Kananga5/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-

Getting Git version info

Temporarily overriding HOME='/home/runner/work/\_temp/aa2fcabf-463e-4bea-8a8b-9b1af7bb7656' before making global git config changes

Adding repository directory to the temporary git global config as a safe directory

/usr/bin/git config --global --add safe.directory /home/runner/work/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-

Deleting the contents of '/home/runner/work/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-'

Initializing the repository

Disabling automatic garbage collection

Setting up auth

Fetching the repository

Determining the checkout info

/usr/bin/git sparse-checkout disable

/usr/bin/git config --local --unset-all extensions.worktreeConfig

Checking out the ref

/usr/bin/git log -1 --format=%H

0e9be0616f84440346b333e424b0316c2773c94c

0s

Run echo Hello, world!

Hello, world!

0s

Run echo Add other actions to build,

Add other actions to build,

test, and deploy your project.

0s

Post job cleanup.

/usr/bin/git version

git version 2.50.1

Temporarily overriding HOME='/home/runner/work/\_temp/8e284bd4-e182-4601-a142-ce00de7d5cd5' before making global git config changes

Adding repository directory to the temporary git global config as a safe directory

/usr/bin/git config --global --add safe.directory /home/runner/work/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-/data-base-system-rawing-logic-algorigram-program-master-doctoral-career-nated-

/usr/bin/git config --local --name-only --get-regexp core\.sshCommand

/usr/bin/git submodule foreach --recursive sh -c "git config --local --name-only --get-regexp 'core\.sshCommand' && git config --local --unset-all 'core.sshCommand' || :"

/usr/bin/git config --local --name-only --get-regexp http\.https\:\/\/github\.com\/\.extraheader

http.<https://github.com/.extraheader>

/usr/bin/git config --local --unset-all http.<https://github.com/.extraheader>

/usr/bin/git submodule foreach --recursive sh -c "git config --local --name-only --get-regexp 'http\.https\:\/\/github\.com\/\.extraheader' && git config --local --unset-all 'http.<https://github.com/.extraheader>' || :"

0s

Cleaning up orphan processes

**Published Alison meeting**

**Part 1 career mentor path training employment build skill cvs**

**Part 2 course learner:**

**By tshingombe tshitadi fiston**

**Background Experimental Topics for E-Learning and Career Development**

**1. Introduction to E-Learning Platforms**

Platforms like Alison offer free online courses and certifications to empower learners

globally.

They provide over 5,500 courses across disciplines such as IT, healthcare, business,

engineering, and personal development.

**2. Personalized Career Ready Plans**

Tools like "Career Ready Plan" enable users to explore tailored educational paths for

upskilling in current roles or transitioning to new careers.

Free personality assessments help learners understand their strengths and weaknesses for

better career alignment.

**3. Learning Modules and Certification Programs**

Categories of courses include:

o IT (1,217 courses)

o Business (1,679 courses)

o Engineering & Construction (795 courses)

o Teaching & Academics (1,560 courses)

o Personal Development (1,277 courses)

Courses are offered in various languages, enhancing accessibility for global learners.

**4. Building Careers through Practical Tools**

Users can build professional resumes using easy-to-use templates.

**194 |** P a g eJob-focused training ensures readiness for real-world challenges, like interviews and

workplace expectations.

**5. Learning Partnerships**

The platform collaborates with top institutions such as Stanford, MIT, and Microsoft to

offer quality content from leading experts.

Special features like "Alison for Business" provide tailored solutions for organizational

learning and development.

**6. Mobile Accessibility**

The Alison App allows learning on the go, even offline, with thousands of courses

available anytime, anywhere.

**7. Popular Trends and Courses**

Trending topics include business analytics, healthcare advancements, graphic design, and

leadership management.

Course recommendations and diploma options are aligned with current market demands.

**8. Graduate Outcomes and Networking**

Over 45 million learners and 10 million graduates demonstrate the platform’s success in

helping users achieve educational and career goals.

Users can explore success stories and graduate outcomes for inspir

Your Alison dashboard looks active and full of opportunities to maximize your learning and

career development journey. Here's a clear summary and strategy for leveraging your platform

effectively:

**Learning Dashboard Highlights**

**Courses in Progress:**

1. Electrical Engineering - Electrical Transformer Components (86% Complete). *Tip:*

Prioritize completing this to claim your certificate and enhance your qualifications.

**Other Recommended Courses:**

o Diploma in Electrical Studies.

o Introduction to the Electrical Trade.

o Introduction to Electrical Wiring Systems. *Suggestion:* These courses align well

with your interest in electrical engineering. Completing them could solidify your

expertise further.

**Statistics & Medals:**

o Learning Time: 38 minutes logged so far.

**195 |** P a g eo Medals Earned: 2 Bronze and 1 Silver. *Goal:* Learn consistently for 3 days in a

week to unlock the Gold medal while increasing your total course hours.

**Goals and Action Plan**

1. **Complete Current Courses:** Focus on wrapping up your ongoing courses to maximize

your dashboard achievements and claim certificates.

2. **Develop a Career Plan:** Utilize tools like "Career Ready Plan" and "Create Resumé/CV"

to tailor your educational achievements for future job applications.

3. **Upskill Strategically:**

o Consider enrolling in advanced courses or diplomas related to energy systems,

electrical design, and project management.

o Keep an eye on trending courses in South Africa for skills in demand.

4. **Leverage the App:** Download the Alison App to continue learning offline, ensuring

flexibility even when internet access is limited.

5. **Stay Consistent:** Set study reminders to maintain regular progress and aim to surpass the

average learning time for better performance tracking.

**Background Experimental Overview: Learn & Build Your Career**

**1. Claim Your Certificates**

Completing courses unlocks certificates that validate your skills and learning

achievements. These are great additions to your professional profile and CV.

**2. Career Ready Plan**

A guided, step-by-step career plan tailored to your goals.

Perfect for learners unsure of where to start, this tool helps align your education and

professional aspirations.

**3. Resumé Builder**

Create a free, polished résumé to showcase your skills effectively to potential employers.

It's a convenient way to ensure your qualifications stand out.

**4. Assessments for Career and Personal Growth**

**Workplace Personality Assessment:** Discover your strengths and weaknesses and how

they align with preferred roles.

**Mental Wellbeing Check-Up:** Measure your emotional and physical state to support

personal and professional development.

**5. Self-Improvement and Career Courses**

Explore trending career paths and courses tailored to in-demand skills.

**196 |** P a g eTop self-improvement courses help you grow holistically.

**6. Unique Features to Accelerate Learning and Success**

**Earnings Tracking:** Monitor your progress and achievements over time.

**Personal Recommendations:** Curated suggestions based on your interests and

completed courses.

**Suggested Plan of Action**

**Step 1:** Start with the "Career Ready Plan" to discover your most suitable career path and

map a strategy for success.

**Step 2:** Use the Resumé Builder to create a professional CV highlighting your

certifications and skills.

**Step 3:** Take the Personality Assessment to align your strengths with the right career path.

**Step 4:** Enroll in targeted courses for in-demand skills, completing certifications to

enhance your profile.

**Step 5:** Schedule regular check-ins for the Mental Wellbeing Check-Up to maintain a

healthy balance between personal growth and career ambitions.

**Your Learning Journey on Alison**

**1. Current Progress Overview**

**Courses in Progress:** Electrical Measuring Instrumentation (Enrolled on 10th March,

0% completed).

**Achievements in March:**

o Earned one bronze medal by learning one day in the month.

o Best learning day: 10th March (18 minutes logged).

**2. Suggested Actions for Improvement**

Aim for consistent learning across the week to unlock silver and gold medals.

Set a personal goal to complete at least one course per month, starting with the current

course.

Take advantage of the study reminder feature to establish a regular learning routine.

**3. Tools to Boost Your Career**

**Career Ready Plan:** Discover your optimal career path with a step-by-step guide.

**Resumé Builder:** Craft a polished and professional CV to showcase your skills.

**Aptitude and Reasoning Tests:** Assess where you stand with free tests like:

o Verbal and Numerical Reasoning.

o Abstract Reasoning.

**4. Free Online Course Categories to Explore**

**197 |** P a g eIT, Engineering & Construction, Teaching & Academics, Personal Development, and

Business—all aligned with your areas of interest.

Focus on certifications or diplomas that match your goals in electrical engineering or

other technical fields.

**5. Additional Features**

**Mobile App:** Learn offline by downloading the Alison app, making it easier to study on

the go.

**Graduate Outcomes:** Explore testimonials and success stories to stay motivated.

**6. Steps to Advance Next Month**

Complete a learning day for at least three days weekly.

Prioritize completion of Electrical Measuring Instrumentation and claim your certificate.

Enroll in complementary courses like "Diploma in Electrical Studies" to broaden your

expertise.

**Learning and Development Overview**

**1. Courses and Certifications**

Access over 5,500 free courses spanning IT, health, engineering, and personal

development.

Certificates and diplomas validate your skills and enhance professional profiles.

**2. Career Tools**

**Aptitude Test:** A free, expert-validated tool assessing verbal, numerical, and abstract

reasoning.

**Resumé Builder:** Create a polished CV to showcase your skills for job applications.

**Personality Assessments:** Explore workplace fit and career alignment based on your

unique traits.

**3. Accessibility and Convenience**

**Offline Learning:** Download the Alison App to continue courses without internet access.

**Language Options:** Courses available in English, Spanish, French, Italian, and Brazilian

Portuguese, making learning globally accessible.

**4. Insights and Recommendations**

Personalized course recommendations based on aptitude test results.

Progress tracking with daily study reminders and medals to incentivize consistency.

**5. Learning Statistics and Goals**

**198 |** P a g eSet monthly targets to improve learning hours and course completions.

Earn medals by maintaining regular study habits (Bronze for 1 day, Silver for 2 days,

Gold for 3 days of learning in a week).

**6. Specialized Assessments**

**Mental Wellbeing Check-Up:** Gauge emotional and physical health.

**Career Path Guidance:** Use tools like "Career Ready Plan" for tailored professional

strategies.

**7. Business and Advanced Features**

**Corporate Learning Solutions:** Tailor educational programs to organizational needs.

**Affiliate Program:** Create or recommend courses for earning opportunities.

**Recommended Action Plan for Tshingombe**

1. **Focus on Current Courses:** Complete "Electrical Measuring Instrumentation" and

explore additional topics in engineering and construction.

2. **Take the Aptitude Test:** Use the results to identify strengths and align your career path

strategically.

3. **Build Your Profile:** Update your Alison profile to reflect achievements and

certifications.

4. **Leverage Offline Learning:** Utilize the Alison App to study anywhere, anytime.

5. **Explore Advanced Opportunities:** Enroll in diplomas or certifications aligned with

your interests to deepen expertise.

**Understanding Your Score**

**Current Performance:** Beginner level in verbal reasoning, with strengths in vocabulary

and grammar (3/16) and opportunities for improvement in reading comprehension and

literacy.

**Percentile Rank:** You scored better than 6% of global test-takers. This baseline is a

strong starting point for growth!

**Actionable Steps to Improve Verbal Reasoning Skills**

1. **Targeted Learning with Alison's Courses:** Alison offers free courses specifically

designed to strengthen verbal reasoning and communication. I recommend starting with:

o *Essential Grammar Skills*

o *Reading and Writing English for Beginners*

o *English Vocabulary and Pronunciation*

2. **Daily Practice:**

o Spend 10–15 minutes daily reading short articles, newspapers, or blogs. Focus on

understanding context, identifying main ideas, and expanding your vocabulary.

**199 |** P a g e**200 |** P a g e

o Use free apps like Merriam-Webster or Duolingo to reinforce word usage and

grammar.

3. **Practical Exercises:**

o Practice verbal reasoning sample questions (e.g., reading passages and answering

comprehension questions).

o Start journaling or summarizing stories in your own words to build literacy and

comprehension over time.

4. **Engage in Conversations:**

o Join language exchange groups online or locally to improve oral communication

skills.

o Practice speaking English in everyday scenarios to build confidence.

5. **Utilize Alison Tools:**

o Incorporate recommendations from your test report into a structured learning plan.

o Keep track of your progress on Alison's dashboard.

**Goal-Setting for the Next 3 Months**

**Short-Term Goal:** Complete at least two courses focusing on vocabulary, grammar, and

comprehension.

**Mid-Term Goal:** Retake the Aptitude Test and aim to increase your percentile rank by at

least 15–20%.

**Long-Term Goal:** Build enough confidence and skills to apply these improvements in

both educational and professional settings.

Alison Aptitude Test Report



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**Understanding Your Score**

**Performance Overview:** Beginner level with strengths in numeracy (1/5) and data

interpretation (1/5). Opportunities lie in improving problem-solving and deepening your

understanding of numerical concepts.

**Percentile Rank:** Scored better than 14% of global test-takers. This provides a solid

foundation to build upon.

**Actionable Steps for Improvement**

1. **Enroll in Relevant Courses:** Alison offers tailored courses to improve numerical

reasoning. Recommended options include:

o *Introduction to Numerical Analysis*

o *Basic Problem-Solving with Numbers*

o *Fundamentals of Data Interpretation*

2. **Daily Practice:**

o Set aside 10–15 minutes daily to solve numerical puzzles, basic arithmetic

problems, and logic-based questions.o Websites like Mathway or Khan Academy can provide interactive exercises and

tutorials.

3. **Focus Areas:**

o **Problem Solving:** Work on word problems requiring logical solutions or multi-

step calculations.

o **Data Interpretation:** Practice analyzing charts, graphs, and tables to draw

conclusions.

o **Numeracy Basics:** Revisit foundational concepts like percentages, ratios, and

basic algebra.

4. **Track Progress:**

o Retake the test monthly and aim for incremental improvements in each domain.

o Use Alison's development graph to monitor score trends and identify progress

areas.

5. **Practical Applications:**

o Apply numerical reasoning in real-life scenarios like budgeting, managing

expenses, or interpreting reports.

o Explore tools like Excel for data analysis to practice interpretation skills.

**Next Steps**

**Short-Term Goal:** Complete one course in numerical reasoning within the next month.

**Mid-Term Goal:** Improve problem-solving and data interpretation scores by at least 2/5

during the next test attempt.

**Long-Term Goal:**

Your Abstract Reasoning results showcase impressive potential, Tshingombe! Scoring at an

**Intermediate level** with strengths in identifying patterns (5/8) and lateral thinking (3/8) is a solid

foundation to build upon. Let's map out how you can take these skills to the next level:

**Understanding Your Performance**

**Strengths:**

o Identifying patterns and recognizing trends.

o Lateral thinking, which showcases your ability to think creatively and solve

problems innovatively.

**Opportunities for Growth:**

o Strengthening critical thinking (1/8) to enhance problem-solving in complex

scenarios.

o Further improving lateral thinking for more refined decision-making.

**Next Steps to Improve Abstract Reasoning**

1. **Focus on Courses for Improvement:** Alison provides excellent options tailored to

enhancing abstract reasoning:

o *Critical Thinking and Problem-Solving Skills.*

o *Introduction to Logical Reasoning and Trends Analysis.*

**201 |** P a g eo *Innovation and Creativity in Problem-Solving.*

2. **Daily Mental Exercises:**

o Dedicate 15 minutes each day to solve puzzles or brain teasers focused on logical

reasoning and pattern recognition (e.g., Sudoku or visual sequence puzzles).

o Use platforms like

**Overview of Online Certificates**

1. **What is an Online Certificate Program?**

o A short-term, focused, postsecondary training that dives deep into a specific

subject or skill set.

o Historically tied to skilled trades (like carpentry or plumbing), online certificates

now cater to professions such as IT, accounting, education, healthcare, and

technology.

o Alison's programs are self-paced, free to study, and typically completed in just 2–

3 hours, providing flexible learning opportunities.

2. **Why Pursue an Online Certificate?**

o **Professional Development:**

Meet employer requirements for job roles.

Improve skills to earn a promotion or career transition.

Build marketable expertise to start a business.

o **Personal Growth:**

Enhance communication, negotiation, or well-being skills.

Satisfy intellectual curiosity or gain deeper knowledge in a field of interest.

3. **Advantages of Online Certificates:**

o **Accessibility:** Learn anytime, anywhere, at your own pace.

o **Affordability:** Free to study, with optional certificates available for purchase as

proof of achievement.

o **Relevance:** Courses align with in-demand skills and emerging industries.

**High-Demand Certificates and Popular Topics**

**Project Management**

**IT and Computer Skills**

**Nutrition and Fitness**

**Business and Leadership Skills**

**Teaching and Education**

**Why Choose Alison?**

Collaborations with elite institutions (Stanford, Yale, MIT, Cambridge, etc.).

Over 4,000 free courses designed by world-class educators and experts.

Flexible, self-paced structure tailored to meet individual needs and schedules.

**Action Plan for Tshingombe**

**202 |** P a g e**Step 1:** Enroll in a certificate program tailored to your career goals or personal interests.

For example:

o *Project Management*: To enhance leadership in the energy or education sectors.

o *IT or Engineering Topics*: Aligned with your expertise in electrical systems.

**Step 2:** Dedicate 2–3 hours per week to complete a certificate to demonstrate your

commitment to continuous learning.

**Step 3:** Use the "Career Ready Plan" to align your newly acquired skills with job

opportunities.

**Step 4:** Add certifications to your resumé using Alison's Resumé Builder to showcase

your qualifications to potential employers.

our exploration of online certificates with Alison offers exciting prospects for both personal and

professional growth! Here's a comprehensive breakdown of the key takeaways and opportunities:

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your qualifications to potential employers.

Your Workplace Personality Assessment highlights valuable insights into your strengths and

areas for improvement, Tshingombe! Here's a structured overview to help you use this

information effectively:

**Key Highlights from Your Assessment**

**Top Strengths (Scores: 10/10):**

1. **Assertiveness** (People Skills):

o You excel in leadership roles and confidently take charge in teams.

o Recommended Course: *Diploma in Business Communication Skills* (Beginner

Level, 10–15 hours).

2. **Self-Control** (Motivations):

o You maintain composure under pressure and make sound decisions.

o Recommended Course: *The Elements of Entrepreneurial Success* (Advanced

Level, 4–5 hours).

3. **Entrepreneurial Drive** (Motivations):

o Strong initiative to create impact and collaborate effectively.

o Recommended Course: *Leadership Skills in Business* (Beginner Level, 2–3 hours).

4. **Positivity** (People Skills):

o A proactive mindset that inspires others.

o Recommended Course: *Public Speaking* (Beginner Level, 2–3 hours).

**Skills to Improve**

1. **Being Persuasive** (Score: 1/10):

o Improve your ability to influence and persuade others effectively.

**204 |** P a g eo Recommended Course: *Diploma in Business Communication Skills*.

2. **Stress Management** (Score: 1/10):

o Develop strategies to manage stress and maintain work-life balance.

o Recommended Course: *Stress Management Skills for Life* (Beginner Level).

3. **Work Structure** (Score: 1/10):

o Enhance task organization and prioritization skills.

o Recommended Course: *Kaizen Approach - Lean Methodology for Continuous*

*Improvement*.

4. **Creative Learning Style** (Score: 3/10):

o Boost creativity in how you absorb and apply knowledge.

o Recommended Course: *Innovative Thinking Techniques* (Beginner Level).

**Recommended Career Paths**

Leadership roles where assertiveness and entrepreneurial drive are vital.

Innovation-driven careers that require positivity and self-control.

Education-focused fields where communication and creativity are key.

**Action Plan**

1. **Enroll in Courses:** Start with topics related to your strengths (e.g., entrepreneurial

success and communication) and gradually address areas for improvement.

2. **Daily Practice:** Incorporate small exercises like mindfulness for stress management or

brainstorming sessions for creative thinking.

3. **Apply Skills:** Use work scenarios to implement what you’ve learned, such as applying

lean methodologies to optimize task structures.

4. **Reassess Progress:** Retake the personality assessment monthly to monitor improvements.

Alison’s Top Free Online Courses For "engineerng electrical course diploma"

Discover the best resources and courses on engineerng electrical course diploma - handpicked by

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Did you mean: engineering electrical course diploma?

5,351 courses

**205 |** P a g eDiploma

Beginner Level

engineering

0% complete

**career Opportunities**

1. **Junior-Level Roles:** Maintenance technician, soldering specialist, or assistant in

electrical installations.

. **Senior-Level Roles:** Electrical engineer, system designer, or project manager overseeing

large-scale installations and repairs.

3. **Advanced Careers:** Research-focused roles in electrotechnical engineering, energy

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**Benefits of an Alison Certificate**

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**Learn for Free**

Enrol in a course, finish learning, and pick up new skills - all for free.

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**Study at Your Own Pace**

Study whenever you want, from wherever you want. If you need a break, continue learning from where you left off.

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**CPD Accredited Certificates**

Claim Certificates/Diplomas, add them to your CV, and show off your new skills to the world.

**Explore Related Subjects**

**Frequently Asked Questions**

How are Alison courses structured?

All Alison courses follow the basic structure of Course - Module - Topic - Assessment.Typically, Certificate courses have one assessment at the end of the course and Diploma courses have multiple assessments throughout.Assessments are designed to test your understanding of the content. They may include single or multiple-choice questions. You need to complete all modules and topics, and achieve at least 80% in your assessment in order to pass. The good news is that you can retake the assessment as many times as you like.

When will my lesson start?

Alison courses are designed to be self-paced and self-taught. You can begin a course when you're ready and study whenever you have the chance. The duration of your study is entirely your decision.

What is the course duration?

You can complete our skills-based **Certificate courses** in under 3 hours. They are designed to focus your learning on specific topics in your field or industry.

You can graduate from our **Diploma Courses** in around 6-15 hours. These courses cover a range of topics and are great if you wish to broaden your knowledge on a particular subject area.

What’s the difference between a Certificate and a Diploma course?

**Certificate Courses**

* Duration: 2-3 hours
* Focus: Specific topics within a subject area, like languages, media studies, health, business, or computer programming.
* Note: Not all Certificates have a Diploma equivalent.

**Diploma Courses**

* Duration: 8-10 hours
* Focus: Comprehensive understanding of a subject, covering multiple concepts, such as business management, workplace safety, or nursing.
* Note: If a Certificate is part of a Diploma, you’ll need to complete both separately.

In short, Certificates offer targeted learning, while Diplomas provide in-depth knowledge.

Are Alison courses accredited?

Yes, Alison courses are accredited by CPD UK. This accreditation ensures that our courses meet professional development standards and quality benchmarks. This means a certificate from a course on Alison can now be used as part of your CPD requirements, but please verify with your organisation’s guidelines. For more details on Alison’s accreditation, you can find additional information [here](https://alison.com/about/accreditation).

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 Title

  Headline

*  Language

STEP 2

 Short Summary

*  Content Rights

STEP 3

* Long Description

STEP 4

* Learning Outcomes

STEP 5

 Course Duration

  Meta Title

 Meta Description

**Created:** 2025-04-09 07:54:22

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**Course Language:** English (United Kingdom)

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Course Structure

My first Module: Course Modules Overview 1. Core Knowledge and Theory Modules: o The Electrical Trad

Learning Outcomes

Topic 1 :mastering in studie electrical technologie , circuit breakers

Topic 2 : engineering electrical, civil building , carpentery landsca

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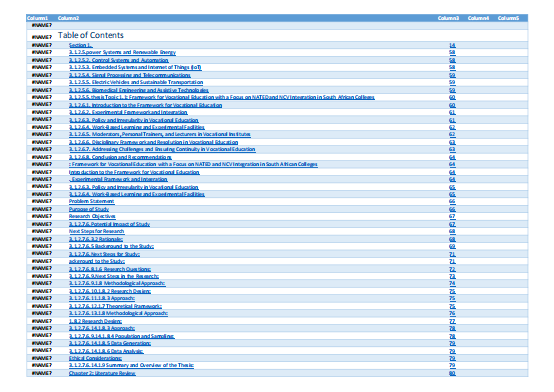
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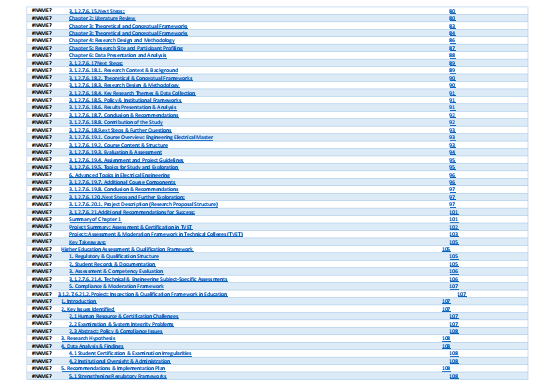
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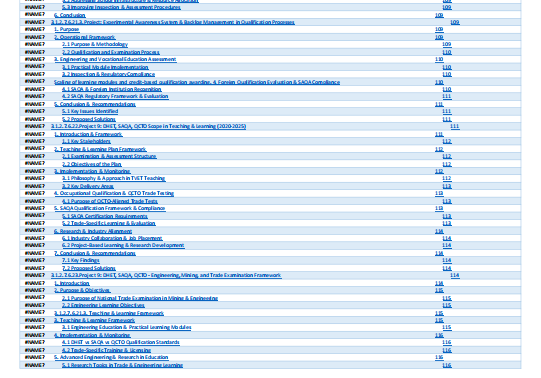
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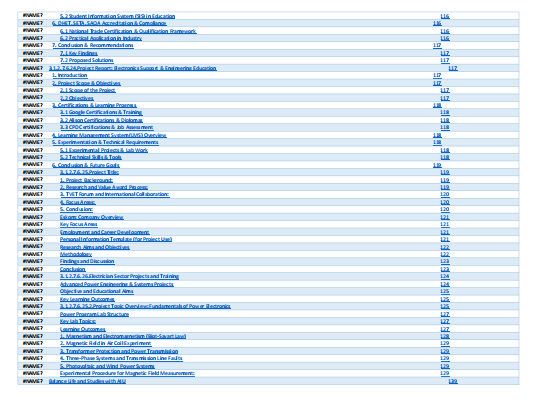
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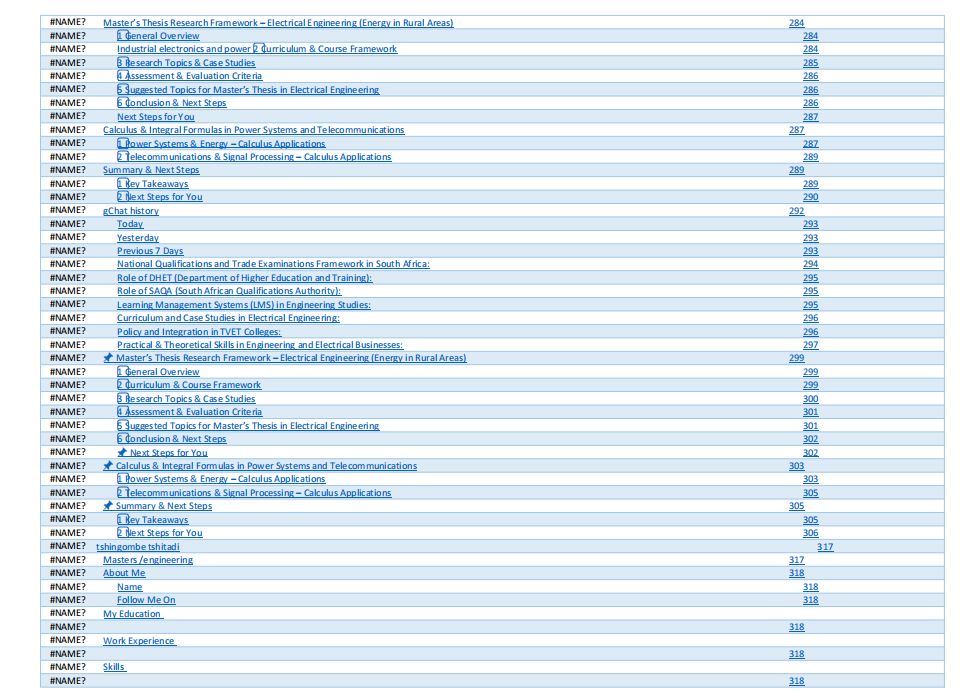
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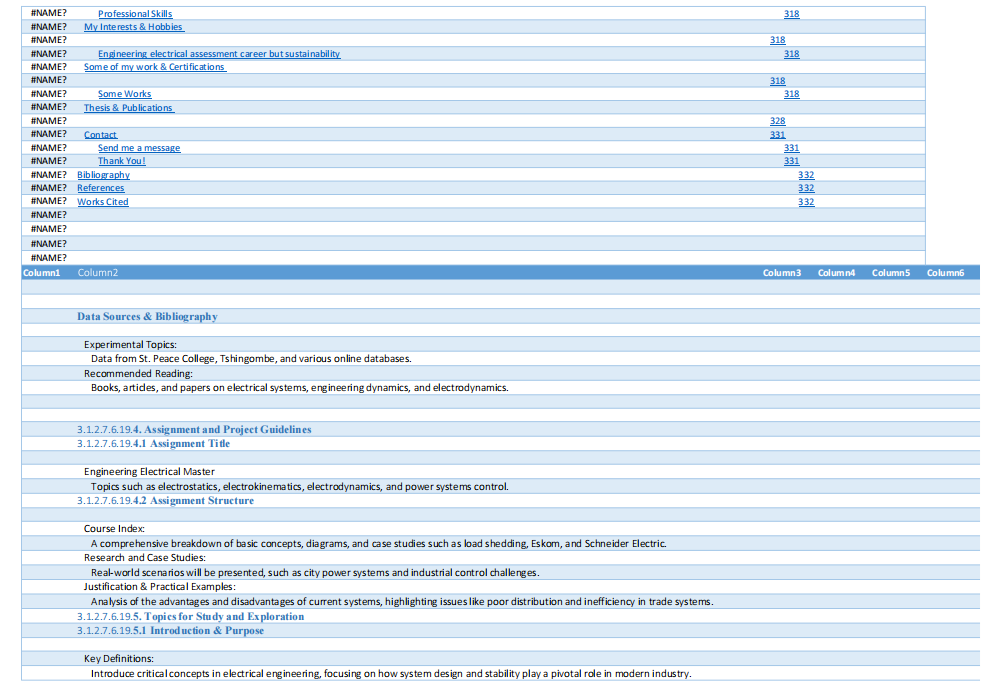
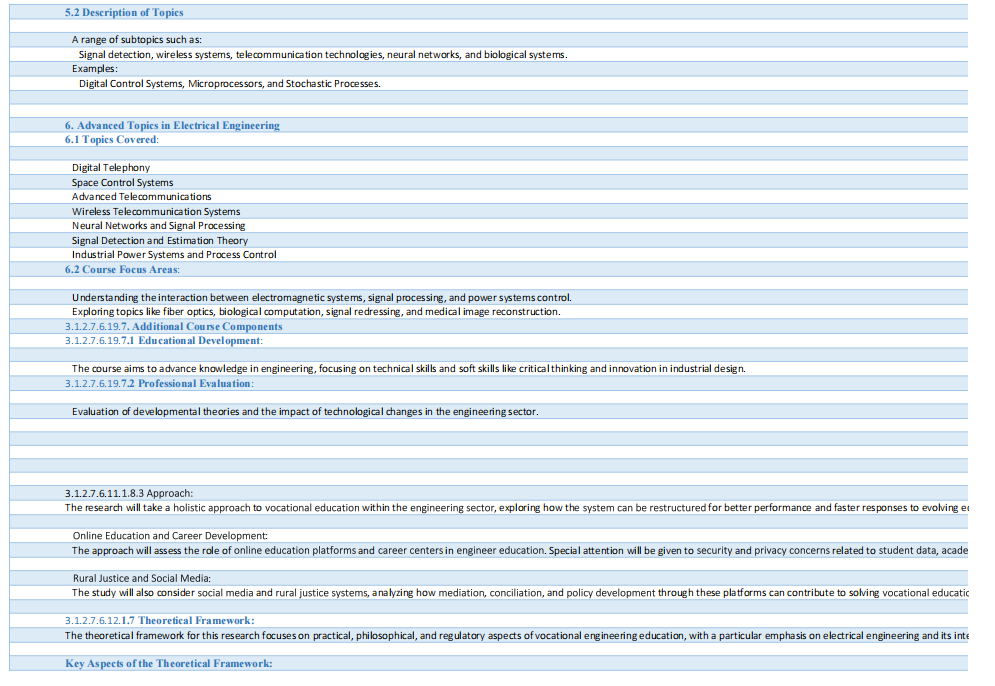
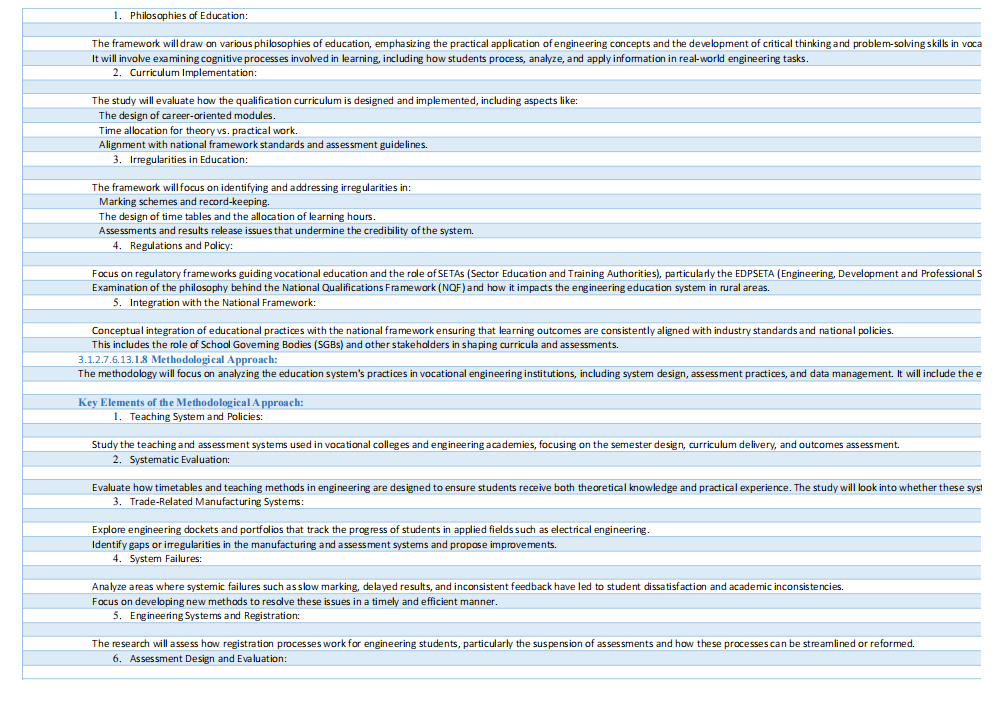
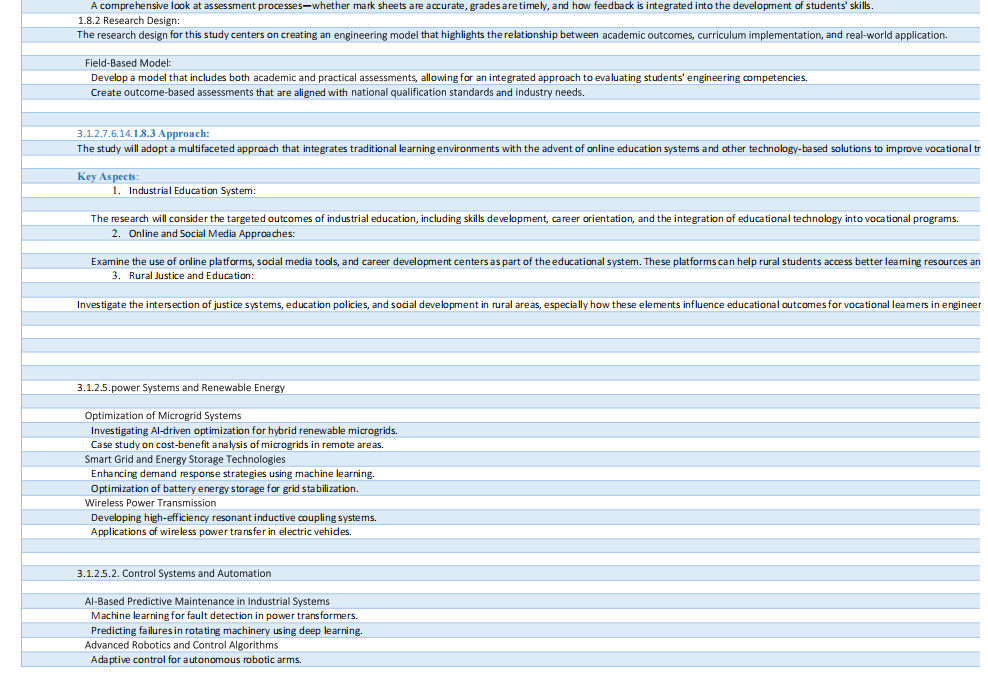
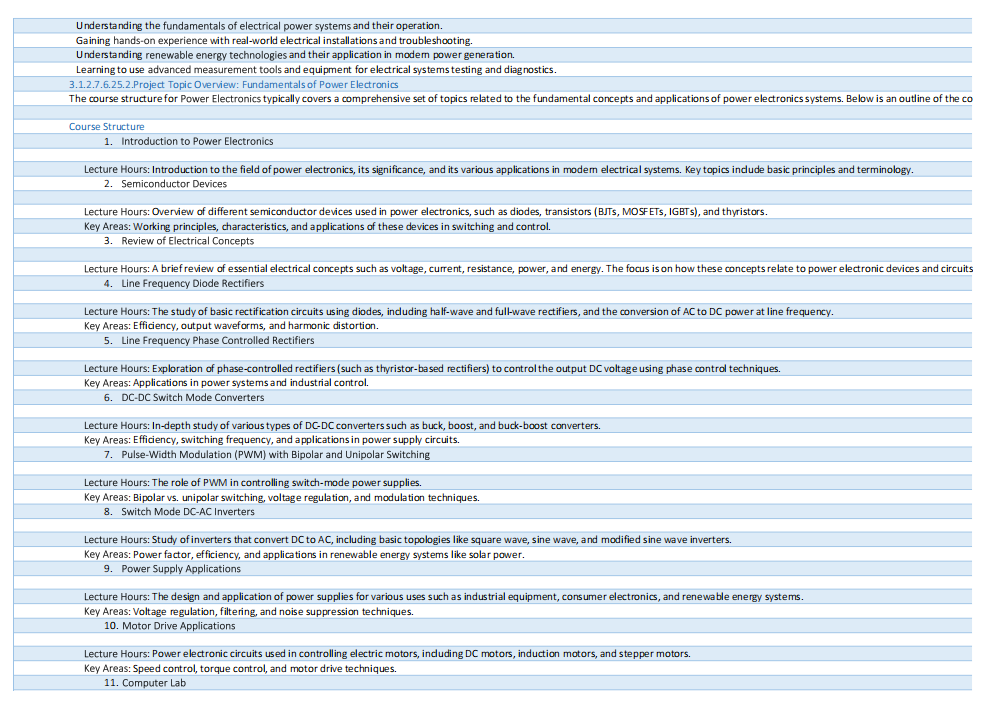
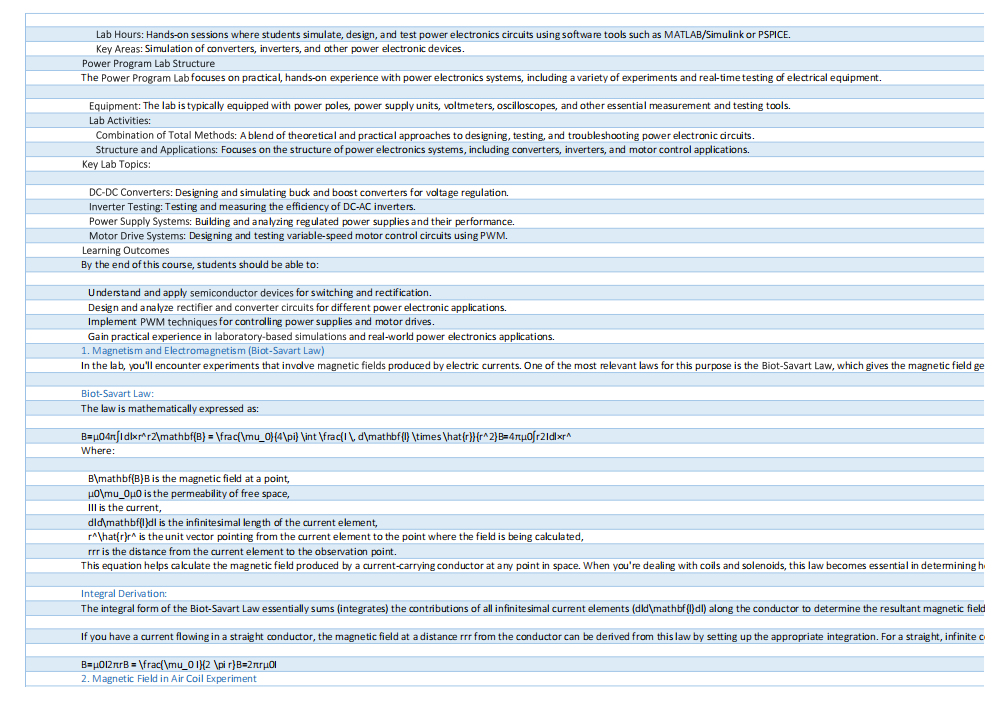
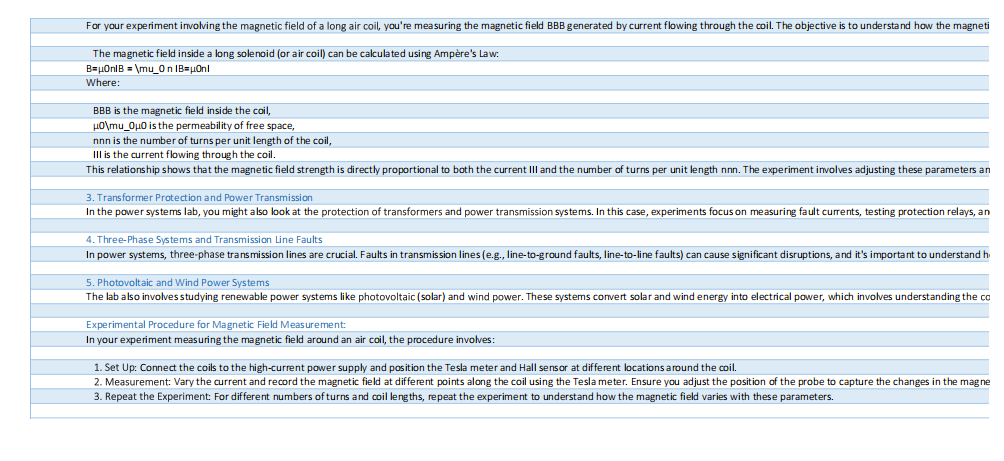
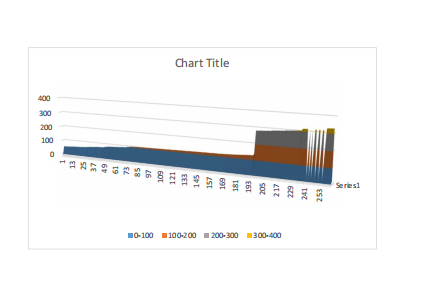
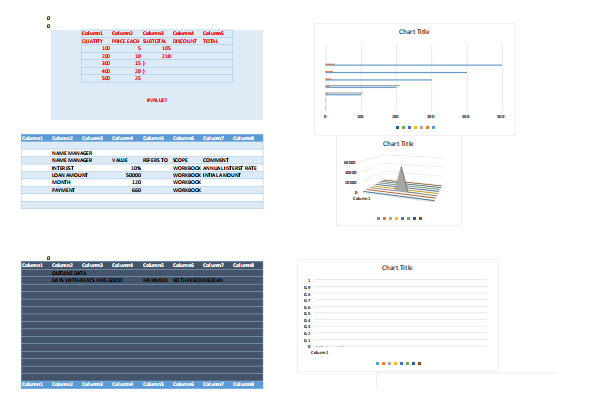


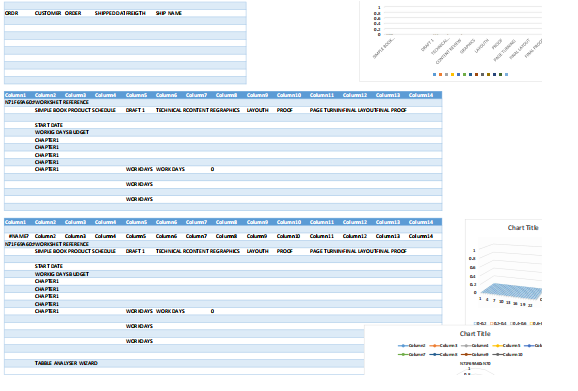










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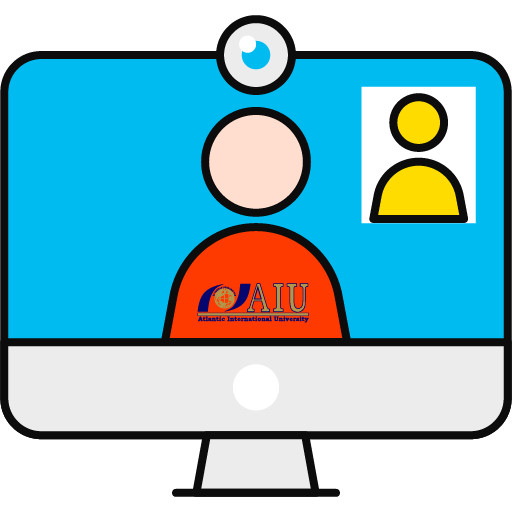
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## 1 .12.15..1 topics :

## 1 AGI in Human-Machine Collaboration

Exploring how AGI can augment human capabilities and lead to new forms of collaboration.

## Future Scenarios of AGI Development

Examining possible future scenarios

### .1 Electric power B2B descriptions

The Business-to-Business (B2B) framework within the electric power industry stands as a unique and complex entity, markedly different from the more familiar terrain of consumer focused markets. This distinction is not merely in scale but also in the depth and intricacies of its operations. Predominantly characterized by transactions of substantial magnitude, the electric power B2B sector encompasses a vast array of activities. These range from the procurement of heavy duty equipment in bulk quantities to the formulation and execution of comprehensive contracts that oversee power generation, transmission, and distribution across vast geographical expanses.

The sheer scale and complexity of these transactions give rise to extended sales cycles. Unlike the swift decision-making often seen in B2C scenarios, B2B dealings in the electric power industry are methodical and deliberate. Each transaction, be it a purchase order for machinery or a long-term service contract, undergoes a meticulous process of evaluations. These assessments are not just about cost-effectiveness but also delve into the technical compatibility, long-term viability, and potential scalability of the offerings. Negotiations, often spanning multiple rounds, aim to strike a balance between commercial interests and operational feasibility. Furthermore, the approval processes are multi-tiered, involving various stakeholders from technical experts and financial analysts to top-tier management, ensuring that every decision aligns with the organization's strategic objectives.

In this industry, the products and services on offer are not generic; they are highly specialized solutions crafted to address specific challenges. Whether it's a state-of-the-art transformer, an advanced grid management system, or consultancy services for renewable energy integration, each product or service demands a deep-seated understanding. Stakeholders must grasp not only the technical specifications but also the broader implications of their choices. This includes potential integration challenges with existing systems, adherence to ever-evolving regulatory frameworks, and ensuring compliance with both local and international safety and environmental standards. In essence, every B2B transaction in the electric power sector is a testament to the industry's multifaceted nature, where commercial, technical, and regulatory

### 2 Notations

In this section, we introduce and define the notations that will be used throughout the methodology. This notation serves as the foundation for understanding the data structures, user behaviors, and item attributes, as well as the collaborative filtering approach we use to recommend products to users.

*U:* Represents the set of all users in the system. Each user is uniquely identified by an index in this set, *N* represents the number of the users.

*I:* Denotes the set of all items available in the system. Similar to users, each item is uniquely identified by an index in this set, *M* represents the total number of the item

*n*: Represents the number of categories for individual product attributes.

*m*: Represents the number of categories for user behaviors.

*S* (*u, v*)*:* Represents the similarity between users *u* and *v*. This similarity metric is crucial for collaborative filtering, as it determines how similar two users are in terms of their preferences. The basic formula for collaborative filtering is given by [Equation 1](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#M1):

rui=∑v∈US(u,v)rvi (1)

*Oui*, *Aui*, *Bui*: these notations denote the order, following, and browsing numbers respectively for user *u* and item *i*. They capture different types of implicit feedback from users.

*wo*, *wa*, *wb*: these are the weight ratios associated with order, following, and browsing data respectively. They determine the significance or influence of each type of implicit feedback in the recommendation process. For examples, we can set *wo* = 1, *wa* = 0.5, *wb* = 0.5.

*BIu*, *NBIu*: these vectors are behavior numbers varying time, representing the bidding and non-bidding behaviors of user *u* respectively. They capture unique B2B behaviors that are essential for understanding user preferences in the electric power E-commerce domain.

The foundation of this collaborative filtering approach is based on the principle that users who have behaved similarly in the past will continue to have similar preferences in the future. The notations introduced above will be instrumental in formulating and understanding the mathematical models and algorithms we employ in subsequent secti

## .5 Digital Marketing for Renewable Energy E-commerce

#### Best practices for digital marketing in promoting renewable energy products and services online Public policies can support the creation of innovative e-commerce business models

As digital transformation progresses, new business models will arise in ways that are difficult to predict, but which also challenge traditional policy frameworks. In particular, some regulatory barriers preserve artificial distinctions between online and offline commerce, even as firms increasingly pursue business models that combine both elements. Where local zoning laws prevent multi-purpose use of brick-and-mortar stores, or planning regulations prevent the development of new last-mile logistic solutio

## 1.6. Sustainable Practices in E-commerce

driven solutions are revolutionizing retail operations by optimizing supply chain management and e-commerce processes. Ant colony optimization (ACO) algorithms play a crucial role in improving vehicle routing, enhancing delivery speed, reducing costs, and minimizing resource

## Case Studies in Renewable Energy E-commerce:

### 3.3 Fusion of behavioral data

The fusion of behavioral data is a pivotal step in the methodology, aiming to create a comprehensive representation of user interactions on the platform. This section delves into the intricacies of how different types of behavioral data are combined to provide a holistic view of user preferences and activities.

#### 3.3.1 Order, following, and browsing data

These three types of data capture the most direct interactions of users with items on the platform. Order data (*Oui*) represents confirmed transactions, following data (*Aui*) signifies items that users have shown interest in, and browsing data (*Bui*) captures the items that users have viewed or explored.

#### 3.3.2 Weight ratios

The weight ratios *wo*, *wa, andwb* are crucial in determining the significance of each type of interaction. They allow us to assign varying importance to different behaviors, reflecting the relative impact of each interaction type on user preferences. For instance, a confirmed order might carry more weight than merely browsing an item.

#### 3.3.3 Bidding and non-bidding data

Unique to the B2B E-commerce landscape, bidding (*BIu*) and non-bidding (*NBIu*) data provide insights into the negotiation and decision-making processes of users. These behaviors, while not directly linked to transactions, offer valuable context about user intentions and preferences.

#### 3.3.4 Behavior vectors

The behavior vectors for bidding and non-bidding data are formulated to capture the essence of these unique interactions. By characterizing user similarity through these vectors, we can better understand the relationships and similarities between users based on their bidding and non-bidding behaviors.

Fui = woOui + waAui + wbBui (2)

This formula ensures that each type of interaction contributes proportionally to the final fused representation based on its assigned weight. A cosine similarity measure is used here to characterize user similarity for the fusion of behaviors, as detailed in [Equation 3](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#M3).

Sf(u,v)=cos(θ)=Fu·Fv||Fu||||Fv|| (3)

For bidding and non-bidding data, we employ a cosine similarity measure to characterize user similarity *Sbid*(*u, v*), *Snb*(*u, v*). This metric captures the angle between the behavior vectors, providing a measure of how alike two users are in terms of their bidding and non-bidding behaviors:

The fusion of behavioral data is a multi

#### User behavior matrix

With the item attribute vectors in place, we can then construct the user-attribute behavior matrix. Firstly, the overall user behavior vector *Bm*×*M* is established with each element representing the number of specific behavior (e.g., order number) for each item. The *m* is the number of behavior types and *M* is the number of items. Secondly, through matrix operations *Bm*×*MIAM*×*n*, we can obtain the user specific-attribute interaction matrix *Rm*×*n*. Finally, by summing up each column of the matrix, we can obtain a vector representing the behavioral performance of each user for each attribute. Therefore, the user-attribute behavior matrix *MN*×*n* is established. Mapping user behaviors onto the item attribute vectors, we can capture the nuanced interactions between users and the multifaceted attributes of items.

#### 3.4.3 Similarity computation

The fusion of item attribute information and user behavior culminates in the computation of similarity scores. The item-attribute similarity *Sitem*(*u, v*) extracted from *MN*×*n*, measure the likeness between two users based on their item attribute information (e.g. item category, suppliers) and the aggregated user interactions (e.g., order, following, browsing). The similarity scores play a pivotal role in the recommendation process, guiding the system toward items that are contextually and attribute wise similar to the user's preferences.

To compute the similarity between users based on their item attribute vectors and user interactions, we employ the cosine similarity metric. In this paper, *Sitem*(*u, v*) is composed of four parts, mainly the three category (primary, secondary and tertiary item category) similarities *Sitemcategory*(*u, v*) and one supplier similarity *Sitemsupplier*(*u, v*).

In essence, the fusion of item information is a meticulous process that aims to bridge the gap between raw item attributes and structured data representations. By integrating item characteristics with user behaviors, we ensure that the recommendation system is both context-aware and attribute-sensitive, leading to more accurate and meaningful recommendations.

### 3.5 Fusion of behavioral data and item information

The recommendation method forms the crux of the approach, leveraging the fused behavioral data and item information to generate personalized product suggestions for users. This section delves into the intricacies of the recommendation algorithm, elucidating the steps and logic that drive the generation of tailored recommendations.

#### 3.5.1 User similarity computation

At the heart of the recommendation method is the computation of user similarity. By comparing the behavior profiles of different users, we can identify patterns and preferences that are shared among them. This similarity metric, denoted as *S*(*u, v*), provides a measure of how alike two users are in terms of their interactions and preferences. It serves as a foundation for identifying potential items that might be of interest to a given user, as detailed in [Equation 4](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#M4).

S(u,v)=Sf(u,v)+Sbid(u,v)+Snb(u,v)+Sitem(u,v) (4)

The elements in similarity matrix *S*(*u, v*) vary between 0 and 7. The higher the value in the matrix, the greater the similarity between the related users.

#### 3.5.2 Historical data consideration

A user's historical data plays a pivotal role in shaping recommendations. By analyzing past interactions, purchases, and preferences, we can glean insights into a user's tastes and inclinations. This historical context ensures that the recommendations are not only based on current interactions but also influenced by a user's long-term behavior.

#### 3.5.3 Item ranking

Once user similarities are computed and historical data is factored in, the next step is to rank items based on their relevance to a given user. This ranking process involves scoring items based on their potential appeal to the user, considering both the user's behavior and the item's attributes.

#### 3.5.4 Top-K recommendations

The culmination of this recommendation method is the generation of the Top-K recommendations. These are the K items that have the highest relevance scores for a user. By focusing on the top-rated items, we ensure that users are presented with products that are most likely to align with their preferences and needs.

The recommendation for a user *u* is formulated as [Equation 5](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#M5):

RSu={i1, i2, …, iK} (5)

where *ik*∈*I* , and *K* is defined as the mean of historical order number of user *u*. This formula ensures that the recommended items are those with the highest relevance scores, taking into account both user similarity and item attributes.

In summary, this recommendation method is a multi-faceted approach that synergizes user behaviors, item attributes, and historical data to generate personalized product suggestions. By considering a wide array of factors and employing sophisticated algorithms, we aim to provide users with recommendations that are both relevant and meaningful, enhancing their e-commerce experience.

## 

Examination of successful case studies in renewable energy e-commerce businesses.

## 1.8 Regulatory Environment for Online Retail in Renewable Energy:

## Experiments and discussion

In this section, a real case dataset was utilized to assess the effectiveness of the proposed recommendation model. The case study results demonstrate the proficient performance of the proposed approach.

### 4.1 Data descriptions

The research presented in this study heavily relies on the rich dataset sourced from Beijing Huadian E-commerce Technology Limited Company, a leading entity in the B2B E-commerce sector of the electric power industry. This meticulously curated dataset, which spans the entire duration of 2022, offers an unparalleled window into the multifaceted interactions of 217 distinct users as they navigate through an extensive catalog of 346,672 products.

At the heart of this dataset lies five pivotal categories of user behavior: order data, following data, browsing data, bidding data, and non-bidding data. Each of these categories, while valuable in its own right, collectively paints a comprehensive picture of user interactions, preferences, and decision-making processes on the platform. The more traditional data types, such as order, following, and browsing data, provide insights into patterns of product discovery, interest, and acquisition. On the other hand, the inclusion of specialized data types like bidding and non-bidding data offers a deep dive into the unique B2B behaviors that set this platform apart from conventional e-commerce platforms. The intricate relationship between bidding activities and order behaviors, for instance, sheds light on the multi-layered negotiation, evaluation, and decision-making phases that often precede a finalized B2B transactio

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Understanding the regulatory and compliance landscape impacting e-commerce in renewable energy.

## 1.9 Future Trends in Online Retail and Renewable Energy

Exploring future trends and innovations at the intersection of online retail and renewable

#### heme 5: AI-Powered Product Recommendations

AI technologies like collaborative filtering (CF) and recommender systems are transforming e-commerce by providing personalized product suggestions. Integrated into e-commerce platforms, recommender systems help users navigate vast inventories with tailored recommendations based on their preferences and behavior ([Jha et al., 2021](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr19-09711023241303621)). By analyzing user data, these systems improve both user experience and engagement, optimizing recommendation personalization ([Zhao, 2023](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr60-09711023241303621)). CF is particularly effective, using insights from multiple users to predict individual preferences based on shared product interactions ([Yu et al., 2021](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr58-09711023241303621)). These AI-driven tools give businesses a competitive edge by enhancing user engagement.

#### Theme 6: Advanced E-commerce Analytics

In the dynamic world of e-commerce, a suite of innovative technologies including big data analytics, data mining, and deep learning is revolutionizing online trading and enhancing customer experiences. At the forefront, big data analytics and data mining are critical for managing large datasets, which help in predicting customer preferences and bolstering decision-making processes ([Jeevitha et al., 2023](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr18-09711023241303621); [Mandala et al., 2023](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr33-09711023241303621)). Specifically, data mining technology plays a key role in efficiently extracting vital information from e-commerce platforms, facilitating text retrieval, and analyzing consumption trends to forecast consumer demand and purchasing power ([Zhong, 2022](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr61-09711023241303621)). Moreover, deep learning models like “DeepLimeSeg” are enhancing these capabilities further by refining customer segmentation through advanced algorithms, thereby improving the precision and transparency of marketing efforts ([Talaat et al., 2023](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr52-09711023241303621)). Collectively, these advanced tools are reshaping e- commerce, facilitating more personalized and efficient interactions that enhance the customer experience.

#### Theme 7: Customer Support Powered by AI

This theme discusses the strategic utilization of AI-powered chatbots by e-commerce enterprises to elevate customer satisfaction levels, optimize operational processes, and establish a distinctive presence in a fiercely competitive market landscape. Chatbots, functioning as virtual assistants, employ AI and NLP algorithms to engage users, replicate human interactions, and provide efficient responses to inquiries in various industries ([Siddig & Hines, 2019](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr45-09711023241303621)). They enhance personalized support, reduce customer service costs through automation, and play a vital role in resolving complaints promptly, leading to increased customer satisfaction ([Khan, 2020](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr24-09711023241303621); [Singh et al., 2024](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr47-09711023241303621)). Furthermore, these AI-powered assistants contribute to rebuilding customer trust post-service issues and implementing strategic service recovery measures ([Song et al., 2023](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr49-09711023241303621)). In essence, chatbots represent a valuable asset in elevating customer experiences and streamlining service operations in the modern digital era.

These themes collectively demonstrate the transformative impact of AI technologies on various aspects of e-commerce, from personalized recommendations and predictive analytics to enhanced customer service and supply chain optimization. By embracing AI-driven strategies and solutions, e-commerce businesses can stay competitive, drive growth, and deliver superior shopping experiences to customers in today’s digital marketplace.

## Future Research Frontiers in AI for the E-commerce Sector

The application of the theory, context, characteristics, and methodology (TCCM) framework is essential for comprehensively exploring the multifaceted impact of AI in e-commerce, especially as this field continuously evolves with new technologies and consumer demands. By structuring the study around the TCCM elements, this approach allows for an organized analysis of AI’s role in transforming online commerce, enhancing both academic insight and practical implications for industry stakeholders ([Paul et al., 2023](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#bibr38-09711023241303621)). The field of AI and e-commerce is evolving rapidly, offering innovative ways to enhance consumer experience, personalize interactions, and drive business growth. However, this rapid growth also brings challenges that require critical examination, particularly concerning consumer trust, ethical considerations, and sustainable engagement. This objective (RQ5) seeks to explore future research prospects in AI-driven e-commerce through the TCCM framework, which provides a comprehensive structure

## 2.4 Environmental Journalism and Communication

Learn the techniques and ethics of reporting on environmental issues, and how this impacts public awareness and policy-making.

## 2.5 Digital Publishing and New Media

Analyze the role of digital publishing and social media in shaping discussions and actions regarding sustainability.

## 2.6 Content Creation for Natural Resource Management

Discover practices for creating engaging content that effectively communicates the importance of sustainable natural resource management.

2.7 Policy Advocacy and Public Engagement: xploration. The platform further provides a weekly summary of SDG topics and progress that allow researchers to quickly scan through a collection of papers and determine their relevance. Cactus Communications is developing this technology further to support researchers, institutions, publishers and policymakers in recognizing SDG-relevant research.

Springer Nature has also released 17 [SDG Content Hubs](file:///C:\Users\Library%20SIX\Downloads\course%20ciriculum%20total%20course%20thesis%20alumine(1).docx#c23198452) with the goal of connecting researchers addressing SDG challenges with policymakers and business practitioners. By enhancing the visibility of SDG publishing activities through the content hubs, they aim to connect the key communities needed to drive global progress.

The RELX [SDG Resource Center](https://sdgresources.relx.com/) is another example that aims to aid researchers and the public by giving them access to critical content that builds understanding about the SDGs. The resource center hosts multiple initiatives like annual events, podcasts, in-depth reports, SDG News Tracker (by LexisNexis Newsdesk) and key research published by Elsevier, all under one roof.

### 2.2. New journals on SDG-relevant topics

In recent years, many academic publishers have increasingly focused on issues related to sustainable development, aligning with global priorities of the SDGs. For example, PLOS has expanded their Open Access portfolio to include more focused journals like [PLOS Climate](https://journals.plos.org/climate/) and [PLOS Global Public Health](https://journals.plos.org/globalpublichealth/), which directly address environmental sustainability and global health challenges. Similarly, Springer Nature has launched several specialized journals such as [Nature Food](https://www.nature.com/natfood/), [Nature Sustainability](https://www.nature.com/natsustain/), [Nature Energy](https://www.nature.com/nenergy/), and [Nature Water](https://www.nature.com/natwater/). These journals aim to foster interdisciplinary research that drives innovation in food security, sustainable resource management, renewable energy, and water conservation, critical areas underpinning the SDGs.

Furthermore, the trend towards open access publishing has been instrumental in democratizing knowledge and fostering inclusivity in scientific discourse. Springer Nature’s Discover series, including [Discover Cities](https://link.springer.com/journal/44327), [Discover Oceans](https://link.springer.com/journal/44289), [Discover Energy](https://link.springer.com/journal/43937), and [Discover Sustainability](https://link.springer.com/journal/43621), exemplifies this shift by offering a fully open access (OA) platform for researchers across the globe. By publishing Open Access, these journals are dedicated to reaching a broader audience of policymakers, global scholars, and the public. Additionally, platforms like ScienceOpen have introduced journals such as the [Journal of Disability Research](https://www.scienceopen.com/collection/KSCDR_JDR) published by the King Salman Center for Disability Research, which contributes to SDG goals like reducing inequalities. ScienceOpen also provides publishing solutions for local journals like the [Nigerian Journal of Tropical Engineering](https://www.scienceopen.com/collection/1d2cbbda-4273-4e3a-a471-41a0b76dde0d) or the [Journal of Ecological Society](https://www.scienceopen.com/collection/48e987de-d982-4aa5-8110-950b178d53eb) from Pune, India. These initiatives reflect a growin

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Learn about the strategies for using publishing to advocate for policies supporting sustainable natural resources management.

## 2.8 Sustainable Practices in Publishing:

## .2 Introduction to Supply Chain Management

An overview of the basic concepts and components of supply chain management, focusing on the flow of goods, information, and finances.

he way in which companies have conducted, managed, controlled and integrated their

business operations have experienced dramatic changes during the last couple of years –

this is especially true in the worldwide recording and music industries. Rapid advances

in technology and increasing regulatory freedom have changed the rules of operation

and competition. Businesses are now competing globally and traditional barriers

between industries are breaking down. To cope with these and other changes and

achieve superior performance, business leaders are moving towards new business

paradigms that allow their companies to work more closely together with their

traditional and new business partners (which include all clients and suppliers up and

down the supply chain), in order to adapt to the rapidly changing marketplace.

As discussed in the fourth chapter under point 4.2, it is proposed by the mentioned

authors that this new collaboration can be successfully achieved by outsourcing all non-

core business activities to a third party business partner, which in turn will lead to an

improved integration through supply chain management. As companies focus on their

core activities and outsource the rest, their success increasingly depends on their ability

to control what happens in the value chain outside their own boundaries (Magretta

2000: 29 - 59). Supply chain leaders are thus reconsidering the linkages, not only

# between functions within their own companies, but also with other An Introduction to Supply Chain Management

This free online course helps you manage your supply chain operations and processes successfully.

Supply chain management is one of the many new management tactics that have emerged and rapidly developed across different industries worldwide. This course will help you understand supply chain systems, logistics and customer response principles. We explore global supply chain operations, warehouse management and the latest business concepts to help you improve your supply chain processes and boost your business’ productivity.

## 3.3. Principles of Traceability

Understanding the importance of traceability in the supply chain, and how it ensures product integrity, safety, and compliance.

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change and increasingly complex and global supply chains have created huge

challenges for all participants. Traditional channel structures and behaviours in the

industry’s supply chains have not kept pace with these changes. In the markets of the

future, comprehensive management which collaborate the supply chain as a whole is

needed to fulfil the new demands set by players and consumers alike.

The hypothesis statement of this thesis is in part derived from the problem statement.

This hypothesis statement is discussed in the research methodology in Chapter 5 under

point 5.3.3 and is stated as follows:

“Record Companies in the South African Recording Industry should outsource

all their non-core business activities to one strategic business partner.”

It is clear to see how this statement is derived from the problem statement of this thesis,

as described here in point 1.1.1. This statement, as well as the opportunities and

problems it may present, is the core around which this thesis cent

## 3.4 Software Engineering Basics:

Introduction to software engineering principles and methodologies that are applicable to the development of supply chain management systems.:9  
(c) The study design  
The design of the research study was drafted in accordance with the prescribed  
methodology of a proper research proposal that were explained in point 1.2.1.1  
above.  
(d) Sampling and data capturing  
Sampling and data capturing of all information gathered from research as well as  
from interviews with targeted players in the recording industry are utilised.  
Employees of record companies, music dealers, compact disc manufacturers and  
supply chain management (SCM) companies were contacted and interviewed  
through personal interviews, telephone conversations and electronic mails (refer  
to the details of the respondents in Chapter 5 under point 5.4.3).  
(e) Information evaluation  
All researched data were scrutinised and reduced to a manageable quantity,  
where after it was used to develop summaries, conclusions and ultimately the  
new MODEL C in the last chapter.  
(f) Information analysis  
The gathered data and information were analysed, assigned with qualitative and  
quantitive values and then interpreted

## 3.5 Supply Chain Digitalization

Exploring the role of digital technologies and software in transforming traditional supply chains into digital networks. The impact of change on logistics systems

Change can either be viewed as a thorny management issue, or as an important

competitive advantage. For logistics practitioners, change comes in many forms, for

example faster order cycle times, increasingly differentiated products and services and

ever more sophisticated technologies to help manage all of this complexity. One

consequence of these changes is the need for more dynamic and responsive logistics

systems that can readily adapt and respond to the changing needs and requirements.

This study will aim to prove that the key to mastering change as a competitive weapon

has two equally important facets: firstly the development of internal company

capabilities and competencies necessary to be truly productive, profitable and flexible,

and secondly to develop linkages and partnerships in the supply chain in order to reap

the optimum benefits of the logistics or supply chain management process.UUnniivvee rrss iittyy ooff PP rree ttoorriiaa ee ttdd –– SS ttee yynn,, MM MM ((22000055))

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A logistics system can be termed a competitive advantage only to the extent that it

provides customers with products and services that they want or need, when they want

or need them. Once customer services strategies are identified, marketing and

distribution channels must be designed to perform to the required standards. Analytical

tools can be used to optimally allocate and deploy financial and human resources to

achieve desired levels of service in a logistics network. Preparing the business for

change and doing things differently, may be th

## 3.6 Data Management in Supply Chains

Understanding the importance of data management and analytics in optimizing supply chain operations and improving traceability.:

## 3.7 Blockchain for Supply Chain Traceability

Exploring the use of blockchain technology to enhance transparency and traceability in supply chains.

## IoT and Smart Supply Chains

Investigating how the Internet of Things (IoT) enables real-time data collection and smart decision-making in supply chains.

## 3.8 Security and Privacy in Supply Chain Software:

Addressing the challenges of ensuring data security and privacy in supply chain management software solutions. onnectivity

The more people or businesses work together in a network or in a supply chain,

the higher the value of that network becomes. Internal connectivity as well as

connectivity to the outside world must not be rated as purely sufficient, but must

be seen to offer added value. In order to successfully manage either knowledge,

change, transformation or any other organisational issue, there needs to be

connectivity in the channel. Both connectivity (‘point b’ above) as well as speed

(discussed in ‘point c’ below) are needed to extract value from the above-

mentioned knowledge (in ‘point a’ above).

(c) Speed

Speed to market is vital. Getting the latest music release sold and delivered into

the trade and onto shop shelves before the competition will ensure at least an

initial market dominance. Just as important is speed of communication to

customers and suppliers (i.e. successful marketing as is discussed in Chapters 3

and 6). Most businesses operate in real time and need the correct and relevant

information available at the click of a button. This is one of the main advantagesUUnniivvee rrss iittyy ooff PP rree ttoorriiaa ee ttdd –– SS ttee yynn,, MM MM ((22000055))

## 3.9 Case Studies and Real-world Applications

Analyzing real-world cases of supply chain management and traceability using software solutions. Reduced risk

Reduced risk accompanied by an increase in certainty of demand can be

achieved. The more information gathered for the forecast (be it from the sales

and marketing team, or via the operations department), the lower the risk of

receiving unprepared-for orders becomes.

(b) Calculation of danger stock levels

By planning ahead and being aware of future orders, a company will be able to

calculate its needed stock levels. A reduction in inventory levels, which in turn

holds significant capital benefits, will be achieved by implementing the

information gained through the forecast.

(c) Production and human resource planning

Fewer staff will be needed to cover demand peaks, for example during the very

busy Christmas holiday shopping season when record companies usually

achieve their highest sales figures (refer to the sales graphs in Annexures C and

D at the end of the thesis). If the forecasting system is accurate, these increased

levels of demand can be anticipated and adequately planned for. The high

amounts of money, which usually needs to be spent on paying over-time

salaries, can then be drastically reduced.

(d) Better demand planning

A definite improvement in the visibility of the customer or the end-user’s

demand can be obtained. By collaborating the research and experience of all

divisions (operations, sales and marketing), a better idea can be formed of what

the needs of customers will be like in the future. This will lead to better planning

through the use of an improved forecasting system.

(e) Improved customer service

Improved customer service will be a direct result

Topics 4.

### .1 Social Media Marketing for Real Estate, Rental, and Leasing

1. Creating Engaging Content
   * Techniques for capturing high-quality photos and videos of properties.
   * Writing compelling property descriptions and posts.
   * Utilizing virtual tours and 3D walkthroughs to enhance listings.
2. Managing Social Media Campaigns
   * Strategies for targeting the right audience on platforms like Facebook, Instagram, and LinkedIn.
   * Best practices for scheduling posts and maintaining consistency.
   * Leveraging paid advertising and promotions to boost visibility.
3. Analyzing Performance Metrics
   * Key performance indicators (KPIs) specific to real estate, such as engagement rate, click-through rate (CTR), and lead generation.
   * Tools and software for tracking and reporting metrics.
   * Case studies and real-world examples of successful social media campaigns in real estate.

### 4.2 Introduction to Social Media Marketing

1. Overview of Social Media Platforms
   * Introduction to major platforms: Facebook, Instagram, Twitter, LinkedIn, TikTok, etc.
   * Understanding the unique features and audiences of each platform.
2. Creating a Social Media Strategy
   * Setting goals and objectives for social media marketing.
   * Identifying target audiences and crafting buyer personas.
   * Developing a content calendar and scheduling posts.
3. Content Creation and Management
   * Types of content: images, videos, stories, live streams, etc.
   * Tools and apps for creating and editing social media content.
   * Best practices for engaging and interactive posts.
4. Analyzing and Optimizing Performance
   * Using analytics tools to measure success and ROI.
   * Understanding key metrics and how to interpret them.
   * Strategies for continuous improvement and staying up-to-date with trends.

I hope these ideas help you build out your course! Let me know if you need any more assistance or specific details.

## 4.2 Introduction to Social Media Marketing

### Understanding the basic concepts of social media marketing and its importance in the real estate, rental, and leasing sectors.: Understanding the Basic Concepts of Social Media Marketing

Social media marketing involves using platforms like Facebook, Instagram, Twitter, LinkedIn, and TikTok to promote products, services, or brands. The goal is to engage with potential customers, build relationships, and drive traffic to your website or listings.

#### Key Concepts:

* Content Creation: Developing engaging and relevant content that resonates with your target audience. This can include images, videos, blog posts, and infographics.
* Audience Engagement: Interacting with your followers through comments, messages, and posts to build a community and foster loyalty.
* Analytics and Metrics: Monitoring the performance of your social media campaigns using tools like Facebook Insights, Instagram Analytics, and Google Analytics. Key metrics include engagement rate, click-through rate (CTR), and conversions.
* Advertising: Utilizing paid advertising options on social media platforms to increase visibility and reach a broader audience. This includes sponsored posts, display ads, and retargeting campaigns.

### Importance of Social Media Marketing in Real Estate, Rental, and Leasing

Social media marketing is especially important in these sectors because:

* Visual Appeal: Real estate relies heavily on visual content. High-quality photos, videos, and virtual tours of properties can attract potential buyers or renters.
* Targeted Advertising: Social media platforms allow you to target specific demographics, such as location, age, income level, and interests. This ensures your listings reach the right audience.
* Brand Building: Consistent and engaging social media presence helps build your brand's reputation and trustworthiness in the market.
* Lead Generation: Social media can be a powerful tool for generating leads. By engaging with your audience and providing valuable content, you can attract potential buyers or renters.
* Cost-Effective: Compared to traditional marketing methods, social media marketing can be more cost-effective and offer a higher return on investment (ROI).

By understanding these concepts and recognizing the importance of social media marketing, you can effectively promote your real estate, rental, or leasing business and stay competitive in the market.

Let me know if there's anything specific you'd like to explore further!

## 4.3 Target Audience Analysis

Identifying and understanding the target audience for real estate, rental, and leasing businesses on social media platforms.

## 4.4 Content Creation for Real Estate

### Strategies for creating compelling content that attracts and retains the interest of potential clients on social media.: Target Audience Analysis for Real Estate, Rental, and Leasing on Social Media

Identifying and understanding your target audience is crucial for creating effective social media marketing strategies. Here’s how you can analyze your target audience in the real estate, rental, and leasing sectors:

#### 1. Define Demographics

* Age: Identify the age groups most interested in buying, renting, or leasing properties. For example, millennials might be looking for first-time homebuying opportunities, while older generations might seek investment properties.
* Location: Focus on geographic areas where your potential customers are located. This could be specific cities, neighborhoods, or regions.
* Income Level: Determine the income bracket of your target audience to match them with appropriate properties.
* Family Status: Consider whether your audience includes singles, young couples, families, or retirees.

#### 2. Understand Psychographics

## 4.5 Platform-Specific Strategies:

### Learning to tailor marketing strategies for different social media platforms such as Facebook, Instagram, and LinkedIn.: Platform-Specific Strategies for Social Media Marketing

Tailoring your marketing strategies to different social media platforms is essential for maximizing engagement and reaching your target audience effectively. Here's how you can craft platform-specific strategies for Facebook, Instagram, and LinkedIn:

#### Facebook

1. Audience Targeting
   * Utilize Facebook's detailed targeting options to reach specific demographics, interests, and behaviors.
   * Create custom audiences based on your existing customer data and lookalike audiences to find new potential clients.
2. Content Strategy
   * Post a mix of engaging content, including property listings, client testimonials, industry news, and educational posts.

## 4.6 Social Media Advertising:

An overview of social media advertising options and best practices for real estate marketers.:  Facebook Ads

* Ad Formats: Image ads, video ads, carousel ads (multiple images or videos), slideshow ads, collection ads (with an instant experience), and lead generation ads.
* Targeting: Demographic targeting, interest targeting, behavioral targeting, custom audiences (based on your own data), lookalike audiences (similar to your existing customers).
* Placement: Facebook Feed, Instagram Feed, Stories, Messenger, Audience Network.

 Instagram Ads

* Ad Formats: Photo ads, video ads,

## Engagement and Community Building:

Techniques for engaging with followers and building a community around your real estate brand.

### Metrics and Analytics: Engagement and Community Building

Building a strong community around your real estate brand is crucial for long-term success. Here are some techniques to engage with followers and foster a sense of community:

#### Techniques for Engaging with Followers

1. Consistent Posting
   * Post regularly to keep your audience engaged and informed. Use a content calendar to plan and schedule posts.
   * Share a mix of content types, including property listings, market updates, client testimonials, and behind-the-scenes looks.
2. Interactive Content
   * Use polls, quizzes, and questions to encourage interaction.
   * Host live Q&A sessions or virtual tours to engage with your audience in real-time.
3. Personalization
   * Respond to comments and messages p

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Understanding social media metrics and utilizing analytics tools to measure and enhance campaign performance.

1. Brand Reputation Management: Transparency
   * Be transparent about your business practices and any changes or updates.
   * Transparency builds trust and fosters a positive reputation.

### Case Studies and Best Practices

Learning from successful social media marketing campaigns can provide valuable insights and inspiration. Here are a few best practices:

1. Real Estate Case Study: Zillow
   * Strategy: Zillow uses high-quality images and videos, informative articles, and market data to engage its audience.
   * Success: They have built a large and engaged following, positioning themselves as a trusted source of real estate information.
2. Rental Property Case Study: Airbnb
   * Strategy: Airbnb leverages user-generated content, such as guest photos and reviews, to build trust and showcase properties.
   * Success: They have created a sense of community among hosts and guests, resulting in high engagement and loyalty.
3. Leasing Business Case Study: WeWork
   * Strategy: WeWork uses professional content, case studies, and success stories to highlight the benefits of their coworking spaces.
   * Success: They have established a strong brand presence and attracted a large audience of professionals and businesses.

By implementing these techniques and strategies, you can effectively engage with your followers, build a strong community around your real estate brand, and maintain a positive reputation on social media platforms.

If you need more detailed information or examples, feel free to ask!

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Strategies for managing and maintaining a positive brand reputation on social media platforms.

## 4.6 Case Studies and Best Practices

Examining successful social media marketing campaigns in the real estate sector and identifying best practice

### .2 Introduction to Telemedicine and Remote Healthcare: Advanced Telemedicine and Remote Healthcare Production

This course is tailored for Master's students who aim to integrate telemedicine and remote healthcare with media production in radio and television. The course equips students with the skills and knowledge to produce impactful media content in the rapidly growing field of telemedicine and remote healthcare delivery.

#### Key Topics:

1. Media Production Techniques
   * Basics of video and audio production.
   * Advanced editing techniques.
   * Production of live broadcasts and pre-recorded shows.
2. Storytelling for Healthcare
   * Crafting compelling stories around telehealth services.
   * Techniques for simplifying complex medical information for a general audience.
   * Use of patient testimonials and case studies.

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Understanding the fundamentals of telemedicine, its history, current trends, and the potential impact on healthcare delivery.

## 5.3 Television and Radio Production Essentials:

Fundamental techniques in radio and television production including scriptwriting, audio/visual recording, editing, and broadcasting.:  Healthcare Technologies

* Overview of telemedicine technologies: video conferencing tools, remote monitoring devices, and telehealth platforms.
* Integration of these technologies into media production.

 Ethical Considerations in Telehealth Broadcasting

* Privacy and confidentiality in telemedicine.
* Ethical dilemmas in telehealth storytelling.
* Regulations and guidelines for telehealth content production.

## 5.4 Medical Narrative and Storytelling

### Crafting compelling stories that communicate complex healthcare concepts effectively to a diverse audience.: 5.3 Television and Radio Production Essentials

An introduction to the fundamentals of television and radio production, focusing on skills necessary for creating high-quality media content.

#### Key Topics:

1. Television Production Basics
   * Camera operation and techniques.
   * Lighting and sound design.
   * Directing and producing TV segments.
2. Radio Production Basics
   * Audio recording and editing.
   * Scriptwriting for radio broadcasts.
   * Hosting and interviewing techniques.
3. Advanced Production Skills

## 5.6 Remote Healthcare Technologies and Innovations:

Exploring the latest telehealth technologies, including devices, software platforms, and innovations that enable remote healthcare.

1. 5.7 Ethical and Legal Considerations in Telehealth Media: dvanced Production Skills
   * Multi-camera setups and live broadcasting.
   * Post-production editing and special effects.
   * Integrating graphics and animations.
2. Production Software
   * Familiarity with industry-standard software like Adobe Premiere, Final Cut Pro, and Audacity.
   * Best practices for efficient and effective media production.

These topics and courses will provide students with a comprehensive understanding of telemedicine and remote healthcare, along with the skills to produce engaging and informative media content.

If you need more details or have specific questions about any of these sections, feel free to let me know!

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Understanding the ethical and legal implications of broadcasting telemedicine content, including patient privacy and data protection.

5.8 Producing Engaging Content for Healthcare: reating captivating and informative healthcare content for radio and television requires a blend of creativity, storytelling, and technical skills. Here are some techniques and strategies:

1. Storytelling Techniques
   * Personal Narratives: Use patient stories and testimonials to humanize healthcare topics and create emotional connections with the audience.
   * Simplifying Complex Information: Break down medical jargon into understandable language using analogies and visuals.
   * Engagement Hooks: Start with a compelling hook, such as an intriguing fact, question, or scenario, to grab the audience's attention.
2. Visual and Audio Elements
   * High-Quality Production: Invest in good lighting, sound, and camera equipment to ensure professional-looking and sounding content.
   * Visual Aids: Use graphics, animations, and infographics to illustrate complex concepts and data.
   * Sound Design: Use background music

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Techniques and strategies for producing engaging and educational healthcare content for radio and television.

## 5.9 Audience Engagement and Feedback in Healthcare Broadcasting

Tools and methods for measuring and analyzing audience engagement and feedback to improve healthcare programming.

5.10 Case Studies and Best Practices: Reviewing successful telemedicine and remote healthcare media projects can provide valuable insights and inspiration. Here are some best practices and case studies:

1. Case Study: Mayo Clinic
   * Overview: The Mayo Clinic produces high-quality video content featuring expert interviews, patient stories, and educational segments.
   * Success Factors: Professional production quality, clear and concise information, and a focus on patient-centered care have contributed to their success.
2. Case Study: Cleveland Clinic
   * Overview: Cleveland Clinic utilizes live streaming for virtual health talks and Q&A sessions with medical experts.
   * Success Factors: Interactive content, real-time engagement, and collaboration with healthcare professionals have enhanced their reach and credibility.
3. Case Study: BBC Health Check
   * Overview: BBC's "Health Check" program provides in-depth coverage of global health issues with expert analysis and field reports.
   * Success Factors: Comprehensive research, diverse perspectives, and high journalistic standards have made the program a trusted source of health information.
4. Best Practices
   * Research-Driven Content: Base your content on thorough research and verified information to ensure accuracy and reliability.
   * Audience-Centered Approach: Focus on the needs and interests of your audience to create relevant and engaging content.
   * Continuous Improvement: Regularly review and analyze feedback and performance metrics to refine and enhance your programming.

These strategies and case studies can help you produce engaging and educational healthcare content, effectively measure audience engagement, and maintain a positive brand reputation in telemedicine and remote healthcare broadcasting.

If you need more details or have specific questions, feel free to let me know!

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Review and analysis of successful telemedicine and remote healthcare media projects and their production processes.

## 5.11 Future Trends in Telemedicine and Media Integration

Exploring future trends in telemedicine and how media can adapt to new healthcare delivery models.

.2 Introduction to Technical Writing

An overview of technical writing, its significance in the tech industry, and the roles and responsibilities of a technical writer.: Key Topics:

1. **Fundamentals of Technical Writing**
   * Understanding the purpose and scope of technical writing.
   * Characteristics of effective technical documentation.
   * Writing for different audiences: experts, technicians, and laypersons.
2. **Writing Manuals and Guides**
   * Structure and components of user manuals and guides.
   * Techniques for breaking down complex processes into simple steps.
   * Use of diagrams, flowcharts, and other visual aid

6.3 Understanding Your Audience:

Learn how to identify and write for different audience levels, ensuring your writing is accessible and understood by your intended readers.:  **reating Technical Reports**

* Types of technical reports: feasibility reports, progress reports, and research reports.
* Organizing and structuring technical reports.
* Writing clear and concise executive summaries, conclusions, and recommendations.

 **Documenting Software and Hardware**

* Writing API documentation and software user guides.
* Creating installation guides and troubleshooting manuals for hardware products.
* Techniques for ensuring accuracy and clarity in technical documentation.

 **Editing and Proofreading**

* Best practices for editing and proofreading technical documents.
* Common errors and how to avoid them.
* Tools and software for technical editing and proofreading

6.4 Research and Information Gathering:  **Primary Data Sources**

* **Interviews:** Conduct interviews with subject matter experts (SMEs), stakeholders, and users to gather firsthand information.
* **Surveys and Questionnaires:** Distribute surveys and questionnaires to collect data directly from your target audience.
* **Observations:** Observe processes, product usage, and workflows to gain a better understanding of the subject matter.
* **Experiments and Testing:** Conduct experiments or tests to gather empirical data.

 **Secondary Data Sources**

* **Literature Review:** Review existing literature, such as academic papers, books, and industry reports, to gather background information and context.
* **Online Databases:** Use online databases like PubMed, IEEE Xplore, and Google Scholar to find relevant research articles and publications.
* **Industry Websites and Blogs:** Follow reputable industry websites, blogs, and forums to stay updated on the latest trends and developments.
* **Company Documentation:** Refer to internal documentation, such as technical specifications, user manuals, and whitepapers, to gather re

Techniques for conducting research and gathering information, including primary and secondary data sources.

6.5 Document Design and Formatting:  **Layout**

* **Structure:** Organize content logically with clear headings, subheadings, and sections.
* **Whitespace:** Use adequate whitespace to prevent clutter and improve readability.
* **Alignment:** Ensure consistent alignment of text, images, and other elements.

 **Typography**

* **Font Choice:** Select legible fonts that are easy to read on both screen and print. Avoid using too many different fonts.
* **Font Size and Style:** Use appropriate font sizes and styles for headings, subheadings, and body text to create a clear hierarchy.
* **Line Spacing:** Use adequate line spacing to make the text more readable.

 **Visuals**

* **Images and Diagrams:** Include relevant images, diagrams, and charts to illustrate complex concepts and data.
* **Captions and Labels:** Provide clear captions and labels for all visuals to enhance understanding.
* **Consistency:** Maintain consistent formatting and styling for all visuals throughout the document.

Explore the principles of effective document design, including layout, typography, and the use of visuals to aid understanding.

6.7 Writing Manuals and Guides: Writing effective instructional materials, such as user manuals and guides, requires clarity and precision. Here are some methods:

1. **Understand the Audience**
   * **Identify Needs:** Determine the needs and skill levels of your audience to tailor the content accordingly.
   * **User Personas:** Create user personas to represent different types of users and their requirements.
2. **Structure and Organization**
   * **Table of Contents:** Provide a clear and comprehensive table of contents for easy navigation.
   * **Step-by-Step Instructions:** Break down processes into simple, sequential steps. Use numbered lists and bullet points for clarity.
   * **Sections and Subsections:** Organize content into sections and subsections to make it easier to follow.
3. **Clarity and Conciseness**
   * **Simple Language:** Use clear and concise language. Avoid jargon and technical terms unless necessary, and provide explanations when used.
   * **Examples and Scenarios:** Include examples and scenarios to illustrate how to perform tasks and troubleshoot issues.
   * **Testing:** Test the instructions with real users to identify any areas of confusion and make necessary revisions.

Detailed methods for writing instructional materials, such as user manuals and guides.

6.8 Using Technology Tools for Technical Writing: Leveraging technology tools can enhance the efficiency and quality of technical writing. Here are some tools to consider:

1. **Writing and Editing Tools**
   * **Microsoft Word:** A versatile word processor with features for writing, formatting, and collaboration.
   * **Google Docs:** A cloud-based word processor that enables real-time collaboration and sharing.
   * **Markdown Editors:** Tools like Typora and Dillinger for writing in Markdown, a lightweight markup language.
2. **Content Management Systems (CMS)**
   * **MadCap Flare:** A powerful CMS designed for technical writers to create and manage documentation.
   * **Adobe FrameMaker:** A professional tool for creating structured documents and long-format content.
   * **Paligo:** A cloud-based CMS for creating, managing, and publishing technical documentation.
3. **Graphics and Visualization Tools**
   * **Adobe Illustrator:** A vector graphics editor for creating detailed diagrams and illustrations.
   * **Snagit:** A screen capture and recording tool for creating annotated screenshots and videos.
   * **Lucidchart:** A web-based tool for creating flowcharts, diagrams, and other visual content.
4. **Collaboration and Project Management Tools**
   * **Trello:** A project management tool that uses boards, lists, and cards to organize tasks and collaborate with team members.
   * **Asana:** A project management tool for tracking tasks, deadlines, and team collaboration.
   * **Slack:** A communication tool for real-time messaging and file sharing among team members.

By mastering these techniques and tools, students will be well-prepared to conduct research, design effective documents, write instructional materials, and leverage technology to enhance their technical writing skills.

Introduction to software and tools commonly used in technical writing, such as content management systems, version control systems, and collaborative platforms.

6.9 Editing and Proofreading: Editing and Proofreading

Effective editing and proofreading are essential for ensuring clarity, consistency, and accuracy in technical documents. Here are some techniques to help you polish your work:

1. **Clarity and Consistency**
   * **Read Aloud:** Reading the document aloud can help identify awkward phrasing, unclear passages, and grammatical errors.
   * **Simplify Language:** Use plain language and avoid jargon or technical terms that may confuse the reader. Ensure that explanations are clear and concise.
   * **Consistency:** Maintain consistent terminology, formatting, and style throughout the document. Use a style guide to ensure uniformity.
2. **Editing Techniques**
   * **Content Review:** Focus on the overall structure and organization of the document. Ensure that the content is logically arranged and flows smoothly.
   * **Fact-Checking:** Verify all factual information, data, and references for accuracy. Ensure that technical specifications and details are correct.
   * **Peer Review:** Have colleagues or subject matter experts review the document for additional feedback and insights.
3. **Proofreading Methods**
   * **Multiple Passes:** Proofread the document multiple times, focusing on different aspects each time (e.g., grammar, punctuation, spelling).
   * **Take Breaks:** Take breaks between editing sessions to approach the document with fresh eyes.
   * **Use Tools:** Utilize proofreading tools like Grammarly, Hemingway Editor, and Microsoft Word's built-in spelling and grammar checker.

6.10 Ethics in Technical Writing

Ethical considerations are crucial in technical writing to maintain integrity, transparency, and trust. Here are some key principles:

1. **Accuracy**
   * **Fact-Based Writing:** Ensure that all information presented is accurate, verifiable, and based on reliable sources.
   * **Avoiding Misleading Information:** Do not exaggerate or misrepresent information. Present data and findings honestly and transparently.
2. **Transparency**
   * **Disclosing Sources:** Always cite sources and references for data, quotes, and research. Provide clear attributions to avoid plagiarism.
   * **Open Communication:** Be transparent about any potential conflicts of interest or biases that may affect the content.

Techniques for ensuring clarity and consistency, and methods to effectively edit and proofread technical documents.

6.10 Ethics in Technical Writing

Understanding the ethical implications and responsibilities of being a technical writer, focusing on accuracy, transparency, and avoiding plagiarism.

6.12 Effective Communication in Teams

Strategies for effective collaboration and communication within project teams, including the role of dffective communication is vital for successful collaboration in technical writing teams. Here are some strategies to enhance team communication:

1. **Clear and Open Communication**
   * **Regular Meetings:** Hold regular team meetings to discuss project progress, address concerns, and share updates.
   * **Communication Channels:** Utilize communication tools like email, Slack, or Microsoft Teams to facilitate real-time collaboration.
2. **Active Listening**
   * **Listening Skills:** Practice active listening by paying attention, asking clarifying questions, and acknowledging others' input.
   * **Feedback:** Provide constructive feedback and be open to receiving feedback from team members.
3. **Role Clarity**
   * **Defined Roles:** Clearly define roles and responsibilities within the team to avoid confusion and overlap.
   * **Documentation:** Document roles, tasks, and deadlines to ensure everyone is on the same page.
4. **Collaborative Tools**
   * **Project Management Tools:** Use tools like Trello, Asana, or Jira to track tasks, deadlines, and project milestones.
   * **Document Collaboration:** Utilize collaborative writing tools like Google Docs or Microsoft Word Online to enable real-time editing and comments.
5. **Conflict Resolution**
   * **Addressing Conflicts:** Address conflicts promptly and professionally. Encourage open dialogue to find mutually agreeable solutions.
   * **Mediation:** Involve a neutral third party if needed to mediate and resolve conflicts.

By mastering these techniques and strategies, students will be well-prepared to edit and proofread technical documents, uphold ethical standards, and communicate effectively within teams.

If you need more details or have specific questions on any of these topics, feel free to let me know!