

FUTURE-READY JOURNALISM

MASTERING AI TOOLS ETHICS AND STRATEGY



FUTURE-READY JOURNALISM MASTERING AI TOOLS, ETHICS, AND STRATEGY

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FUTURE-READY JOURNALISM: MASTERING AI TOOLS, ETHICS, AND STRATEGY

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PREFACE

ii Introduction — Pioneering the Future of Ethical AI

As you read about it in your course, learning activities, and books, ethics is defined as the foundation upon which all decisions, actions, and behaviors are based. The philosophy behind artificial intelligence (AI) is to create machines that can think, learn, and act like humans, but being created by humans, they are not naturally moral. This book is a practical manual for AI developers, AI users, and AI consumers to understand the ethical implications of AI and how to address them.



As you read the book, you will find that the book is not just a collection of facts and figures, but a guide to understanding the ethical implications of AI. The book is divided into two main parts: the first part is a general introduction to AI and the second part is a more detailed look at the ethical implications of AI. The book is written in a clear and concise style, making it easy to read and understand. The book is also a practical manual for AI developers, AI users, and AI consumers to understand the ethical implications of AI and how to address them.

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Overview

The **Hydrogen Production** process using **steam electrolysis** involves electrolyzing **water** into **hydrogen** and **oxygen** using **electricity**. The **hydrogen** is then used in various applications, such as **fuel cells**, **chemical synthesis**, and **industrial processes**. The **oxygen** is typically used in **steel production**, **chemical synthesis**, and **industrial processes**. The **hydrogen** production process involves several **steps**, including **water electrolysis**, **hydrogen storage**, and **hydrogen distribution**. The **hydrogen** production process is a **key** component of the **hydrogen economy**, which is a **vision** of a **low-carbon** energy system that uses **hydrogen** as a **primary** energy carrier.

Target Audience: **Government**, **Industry**, **Academia**, **Media**, **Policy**, and **General Public**.

Key Message: **Hydrogen** is a **clean** and **efficient** energy source.

Content: **Hydrogen** production process, **hydrogen** storage, **hydrogen** distribution, **hydrogen** applications, **hydrogen** safety, **hydrogen** infrastructure, **hydrogen** policy, **hydrogen** market, **hydrogen** investment, **hydrogen** innovation, **hydrogen** challenges, **hydrogen** opportunities.



Figure 1: Hydrogen Production Process

AI in Journalismism Training (30-Hour Course)

With a structured curriculum, conducted workshops, and a focus on hands-on learning, this is the ideal foundation of the most successful AI program.



Day	Module	Topics Covered	Methods
01	Introduction to AI	Understanding the role and potential of AI in journalism, data visualization and basic algorithmic logic	Interactive exercises, group projects and video lessons
02	Practical Case Studies, Ethical and Legal Aspects	Analysis of real-world AI applications, current regulations in various countries	Case studies, expert panels with AI specialists and legal experts
03	Content Creation, Personalized Profiles, Data Mining	AI-generated content analysis, algorithmic detection of bias, real-time news and personalized content	Analysis tools, and interactive AI-generated content
04	AI in Investigative Journalism and Challenges of Transparency	AI in uncovering hidden data and connecting related information, addressing ethical challenges	Interactive exercises, group projects
05	Future Trends and Final Project	Emerging AI trends, future of journalism, AI ethics, challenges and opportunities in the industry	Panel discussion, final project presentations

The Final Air Quality Strategy Report is Separate Project



Environment | Transport | Health

Key Theme for Day 1: Understand AI Fundamentals

Module 1: AI Fundamentals and Machine Learning Engineering

Use machine learning and optimization algorithms to build models for solving real-world problems (e.g., image classification, natural language processing, etc.).

1.1 Learning Objectives

1. Define and understand different types of systems and components.
2. Identify fundamental concepts in engineering.
3. Distinguish between industry and academic research settings.
4. Apply concepts to practical scenarios.

1.2 Content

Understanding complex systems and their interactions through a systems-level perspective and their underlying principles and mechanisms.

Module 1: AI Fundamentals	Module 2: ML and DL
Introduction to AI and its applications	Machine learning and deep learning system management
AI and system design and implementation	Automated production algorithms
Research and development	Simulation and optimization
System design and control	Control systems and optimization

Understanding these systems and their interactions is crucial for modern systems to operate efficiently and effectively, especially when handling large data.

1.3 Introduction to Case Study

Use machine learning and optimization algorithms to build self-organizing systems to solve real-world problems and optimize their performance. This includes understanding the underlying principles and their applications in various domains and systems.

Learning Objectives of Post-Training

Section 1.1 Post-Training Assessment (Continued)

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1.1.1 Assessment Matrix

1.1.1 Topic	1	2	3	4	5	Total Score
1.1.1.1 Fundamentals	One engine operating only	Two engines operating	Two engines operating with bleed	Operated with engine and propellers	Two engines operating simultaneously	
1.1.1.2 Startup Steps	Start taxi	Start engine	Operational on ground	Operational in flight	Operational in cruise	
1.1.1.3.1 Knowledge	Basic of operation	Intermediate	Low expert	Low expert	Low expert	
1.1.1.3.2 Practical Experience	Basic on ground	Basic on ground	Basic on ground	Medium on ground	Medium on ground	



1.1.1.3.2 Training Objectives

- 1.1.1.3.2.1 Before-Training Task (1-2)
- 1.1.1.3.2.2 After-Training Task (1-2)

Question 2 ■ Introduction to ■ the lesson ■ (60 minutes)

- Define ■ Machine Learning (ML) and its purpose.
- Understand the concept of ■ Supervised Learning (SL) and its types.
- Explain the ■ process of supervised learning, including the ■ training and testing phases.
- Describe the ■ importance of ■ data quality and ■ model evaluation.

Activity 1 ■ Practical application of ■ SL using ■ Python ■ library ■ Scikit-Learn.

Objective: The ■ students will learn ■ how to use ■ Scikit-Learn to ■ build a ■ simple ■ supervised learning model.

Question 3 ■ ML (Supervised) ■ How to ■ Use ■ Scikit-Learn ■ to ■ build ■ a ■ simple ■ supervised learning model?

- Understand the ■ basic ■ concepts ■ and ■ terminology ■ of ■ supervised learning.
- Use ■ Scikit-Learn ■ to ■ build ■ a ■ simple ■ supervised learning model.

Case Study ■ The ■ Impact ■ of ■ Machine Learning ■ on ■ the ■ Stock ■ Market

■ Machine Learning (ML) has ■ revolutionized ■ the ■ way ■ we ■ analyze ■ and ■ predict ■ market ■ movements. ■ This ■ case ■ study ■ explores ■ how ■ ML ■ models ■ can ■ be ■ used ■ to ■ forecast ■ stock ■ prices ■ and ■ identify ■ trading ■ opportunities. ■ The ■ case ■ study ■ highlights ■ the ■ challenges ■ of ■ working ■ with ■ financial ■ data ■ and ■ the ■ importance ■ of ■ model ■ evaluation ■ in ■ this ■ context.

Advanced Features, Prompt Engineering

Project 4: Build a Chatbot Using OpenAI GPT-4o (30 minutes)

- Learn the structure of effective Prompt Engineering for Task Completion.
- Explore advanced techniques such as thought process and prompting.

Case Study: OpenAI GPT-4o in Marketing

Objective: Analyze how OpenAI GPT-4o is used in marketing to generate personalized content, increase productivity, and streamline operations. Focus on the use of GPT-4o in content creation, customer support, and data analysis.

Key Takeaways and Insights: AI in Marketing and Customer Support

Response 1: The role of AI in marketing and customer support. Focus on the use of GPT-4o in content creation, customer support, and data analysis.

Response 2: The role of AI in marketing and customer support. Focus on the use of GPT-4o in content creation, customer support, and data analysis.

- Use GPT-4o for content creation, customer support, and data analysis.
- Explore advanced features and use cases for GPT-4o in marketing and customer support.
- Identify the benefits and challenges of using GPT-4o in marketing and customer support.
- Explore the role of AI in marketing and customer support.

Technical Assessment Matrix (Same as Ballpark's Matrix)

We grade **Quality** and **Efficiency** based on the following scale: **1 (Poor) to 5 (Excellent)** and

Job Steps	1	2	3	4	5	Notes/Remarks
Installation	Can perform equipment install	Can describe A/B install	Can perform most install efforts	Can perform most install efforts	Can describe install efforts	
Startup/Stop	Can start A/B	Can start A/B stop A/B	Can start A/B stop A/B	Can start A/B stop A/B	Can start A/B stop A/B	
Efficient Knowledge	Basic equipment A	Intermediate equip systems	Can operate most equipment	Can operate A systems	Can operate most equipment	
Plant Engineering	Basic equip concept	Basic equipment concept	Basic equipment concept	Basic equip concept	Basic equipment concept	



Test **Quality** **Efficiency**

- **Installation Test** **1-5**
- **Startup/Stop Test** **1-5**

What are you getting? **None**

Recommended Test:

- **Basic** **Equip** **Concept** **Test** **1-5** **Plant** **Engineering**
- **Plant** **Engineering** **Test** **1-5** **Plant** **Engineering**
- **Can** **Start/Stop** **Equipment** **Test** **1-5** **Plant** **Engineering**
- **Can** **Perform** **Most** **Install** **Efforts** **Test** **1-5** **Plant** **Engineering**

Case Studies

- **Randomly** **with** **ML** **and** **Deep Learning**
- **How** **to** **Design** **Neural Networks**
- **How** **to** **Design** **Neural Architecture**
- **How** **to** **Design** **Neural**
- **How** **to** **Design** **Neural**

Key Theme for Day 2: AI in the Newsroom Workflow and Verification

Module 2: AI-POWERED DATA JOURNALISM, RESEARCH AND INVESTIGATION

Goal: Equip journalists with the practical skills to harness AI's capabilities within a newsroom context for data-driven reporting and investigative journalism.

2.1 Learning Objectives

- Identify key AI-powered journalism tools and their applications.
- Design a workflow integrating AI tools into journalistic research methods.
- Evaluate AI's impact on investigative reporting.

2.2 Content

Module 2 will explore three core competencies:

- AI-driven data analysis.
- AI-powered research methods.
- Automated investigation processes.

2.3 Assessment Tools

Module 2.1	Module 2.2
Newsroom data analysis tool	Open-source data projects
Newsroom automation system	AI-driven research system
Investigative framework	AI-powered journalism

2.4 Instructional Case Study

Focus on investigative journalism's workflow integration with AI tools across the reporting cycle.

- Discover AI-driven data analysis tools.
- Explore AI-powered research methods.
- Examine the impact of AI on investigative journalism.

1.1 Learning Objectives

Learning Objective 1: Data Sources from the Research

Describe the Two-Phase Sampling Assessment (20 minutes)

- Assess the structure of the data
- Explain the need for two-phase sampling design

Describe the Data Frame Gathering and Research (10 minutes)

- Explain the need for each user background identification and how different data
- Explain the data collection and sampling methods and data frames
- Explain sampling error types
- Explain the data sampling frame

Describe the Data Content Production Efficiency or Output (10 minutes)

- Explain the data production process and the data generation
- Explain the data production process (e.g., statistical reports, website)
- Explain the data production process (e.g., statistical reports, website)

Data Reliability (10 minutes) and Data Accuracy

• Explain the data reliability and accuracy. Explain how data reliability and accuracy are related and how they affect data quality. Explain how data reliability and accuracy are related and how they affect data quality. Explain how data reliability and accuracy are related and how they affect data quality.

• Explain the data reliability and accuracy. Explain how data reliability and accuracy are related and how they affect data quality. Explain how data reliability and accuracy are related and how they affect data quality.

• Explain the data reliability and accuracy. Explain how data reliability and accuracy are related and how they affect data quality. Explain how data reliability and accuracy are related and how they affect data quality.



Researcher's Investigative Techniques (continued)

- Review newspaper and magazine articles.
- Examine newspaper editorials.
- Conduct independent research on newspaper articles.

Case Study: The 1992 Nevada Superfund Cleanup

Issue: How do hazardous waste management sites impact the environment? What are the effects of cleanup, including federal financial assistance and other resources? How do these factors affect an individual's environmental health? What are the policy implications of the cleanup?

Learning Objectives: Students will understand the benefits and costs of cleanup and the impact on the environment.

Keywords: Superfund, hazardous waste, environmental justice, federal assistance.

Researcher's Investigative Techniques (continued)

- Read the newspaper and magazine articles about the hazardous waste management sites.
- Examine the newspaper editorials about the hazardous waste management sites.
- Conduct independent research on newspaper articles, newspaper editorials, and other resources to determine the environmental health effects of the cleanup.

Case Study: The 1992 Nevada Superfund Cleanup

Issue: How do the Superfund sites impact the environment? What are the effects of cleanup, including federal financial assistance and other resources? How do these factors affect an individual's environmental health? What are the policy implications of the cleanup?

Learning Objectives: Students will understand the benefits and costs of cleanup and the impact on the environment.

Keywords: Superfund, hazardous waste, environmental justice, federal assistance.

Exercise 11 ■ Forecasting Sales Growth ■ Forecasting Market Share (Continued)

■ **Activity:** Forecast sales and other performance metrics using a variety of forecasting techniques ■ **Case Study:** Forecasting sales and other metrics ■ **Case Study:** Forecasting sales and other metrics

Forecast	Level 1	Level 2	Level 3	Level 4	Level 5	Forecast Accuracy	Forecast Error
Forecasting Sales							
Time Series	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)		
Market Share	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)		
Stock Pricing	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)		
Price Elasticity	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)		
Forecasting Capacity							
Forecasting	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)		
Forecasting	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)		
Forecasting	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)		
Forecasting	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)	Forecasting (ARIMA)		

Investigational Techniques							
Qualitative Research	Interviews Focus groups	Case studies Ethnography	Content analysis Discourse analysis	Discourse analysis Focus groups	Discourse analysis Focus groups		
Quantitative Research	Surveys Questionnaires	Experimental research Quasi-experiments	Correlational research Causal research	Experimental research Quasi-experiments	Experimental research Quasi-experiments		
Mixed Methods	Surveys Interviews Focus groups	Case studies Ethnography	Correlational research Causal research	Experimental research Quasi-experiments	Experimental research Quasi-experiments		
Researcher	Qualitative Researcher	Quantitative Researcher	Qualitative Researcher	Quantitative Researcher	Qualitative Researcher		

Researcher's Role

- Identify the research problem
- Develop research design
- Collect and analyze data
- Write and disseminate findings

Case Studies

- In-depth study of an individual or group
- Often used to explore complex phenomena
- Focuses on understanding the context and the individual's experience
- Data collected through interviews, observations, and documents
- Used to explore and understand complex phenomena

Key Theme for Day 3: Ethics, Governance, and Responsible AI Journalism

Module 3: Ethics, Governance, and Responsible AI Journalism

3.1 Learning Objectives

1. Understand the ethical implications of AI in journalism
2. Develop critical thinking and problem-solving skills
3. Create a governance framework for responsible AI journalism
4. Apply ethical principles to real-world scenarios

3.2 Context

Context

Addressing the ethical challenges of AI in journalism

Objective	Outcome
Understand the ethical implications of AI in journalism	Recognize the ethical implications of AI in journalism
Develop critical thinking and problem-solving skills	Apply critical thinking and problem-solving skills
Create a governance framework for responsible AI journalism	Develop a governance framework for responsible AI journalism
Apply ethical principles to real-world scenarios	Apply ethical principles to real-world scenarios

3.3 Introduction to Case Study

Addressing the ethical challenges of AI in journalism: A case study on the use of AI in journalism, including the ethical implications of AI in journalism and the importance of responsible AI journalism.

1.1 Neurophysiology of the Motor System

Object 1: The Spinal Nerve and Spinal Cord

- Can describe the structure and function of the spinal cord?
- Can describe the structure and function of the spinal nerve?

Object 2: How Neurophysiology of the Motor System is related to the Nervous System

- Can describe the structure and function of the motor system?
- Can describe the structure and function of the motor system?

Case Study: Analyzing the case study to discuss the importance of neurophysiology and anatomy when studying the motor system.

What is the structure of the spinal nerve and spinal cord?

Ability: Analyze and synthesize information.

Object 3: Neurophysiology of the Motor System

- Can describe the structure and function of the motor system?
- Can describe the structure and function of the motor system?

Ability: Synthesize and evaluate information.

Object 4: Spinal Nerve and Spinal Cord

- Can describe the structure and function of the spinal nerve?
- Can describe the structure and function of the spinal cord?

Ability: Analyze and synthesize information.

Object 5: Neurophysiology of the Motor System

- Can describe the structure and function of the motor system?
- Can describe the structure and function of the motor system?



Use/Apply the methods and techniques for **1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50** **51** **52** **53** **54** **55** **56** **57** **58** **59** **60** **61** **62** **63** **64** **65** **66** **67** **68** **69** **70** **71** **72** **73** **74** **75** **76** **77** **78** **79** **80** **81** **82** **83** **84** **85** **86** **87** **88** **89** **90** **91** **92** **93** **94** **95** **96** **97** **98** **99** **100**

Ability to apply **1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50** **51** **52** **53** **54** **55** **56** **57** **58** **59** **60** **61** **62** **63** **64** **65** **66** **67** **68** **69** **70** **71** **72** **73** **74** **75** **76** **77** **78** **79** **80** **81** **82** **83** **84** **85** **86** **87** **88** **89** **90** **91** **92** **93** **94** **95** **96** **97** **98** **99** **100**

Transfer to **1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50** **51** **52** **53** **54** **55** **56** **57** **58** **59** **60** **61** **62** **63** **64** **65** **66** **67** **68** **69** **70** **71** **72** **73** **74** **75** **76** **77** **78** **79** **80** **81** **82** **83** **84** **85** **86** **87** **88** **89** **90** **91** **92** **93** **94** **95** **96** **97** **98** **99** **100**

1 **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50** **51** **52** **53** **54** **55** **56** **57** **58** **59** **60** **61** **62** **63** **64** **65** **66** **67** **68** **69** **70** **71** **72** **73** **74** **75** **76** **77** **78** **79** **80** **81** **82** **83** **84** **85** **86** **87** **88** **89** **90** **91** **92** **93** **94** **95** **96** **97** **98** **99** **100**

Outcome	Self-rating	Other rating
1. Understand the fundamental ethical principles of the profession.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Recognize the ethical implications of the decisions made in the areas of business, mathematics and ethics.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Understand the ethical implications of the decisions made in the areas of business, mathematics, management and accounting.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Demonstrate the ability to identify ethical issues and analyze them.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. Understand the ethical considerations of the business world, including transparency and social conduct.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
6. Use the ethical principles to make decisions in the business world.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
7. Apply the ethical principles to the business world, including the areas of business, management, and accounting.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
8. Understand the ethical implications of the decisions made in the areas of business, mathematics and accounting.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

81. Identify the strategy for multiplying polynomials and write an unknown equation.	<input type="checkbox"/> True <input checked="" type="checkbox"/> False	<input type="checkbox"/> True <input checked="" type="checkbox"/> False
82. Use the distributive law to expand and factorize the expression $3x^2 + 6x - 9$.	<input type="checkbox"/> True <input checked="" type="checkbox"/> False	<input type="checkbox"/> True <input checked="" type="checkbox"/> False
83. Understand the area of a circle based on the steps needed to address the various circles in a context.	<input type="checkbox"/> True <input checked="" type="checkbox"/> False	<input type="checkbox"/> True <input checked="" type="checkbox"/> False
84. Apply the law to prove De Moivre's and trigonometric identities.	<input type="checkbox"/> True <input checked="" type="checkbox"/> False	<input type="checkbox"/> True <input checked="" type="checkbox"/> False
85. Use the binomial theorem to find the coefficients of x^4 in $(x^2 + 2x - 3)^4$.	<input type="checkbox"/> True <input checked="" type="checkbox"/> False	<input type="checkbox"/> True <input checked="" type="checkbox"/> False
86. Understand the need for arithmetic mean and geometric mean.	<input type="checkbox"/> True <input checked="" type="checkbox"/> False	<input type="checkbox"/> True <input checked="" type="checkbox"/> False
87. Use mean values to find a set of data and use it for using it in Context and mean and geometric mean.	<input type="checkbox"/> True <input checked="" type="checkbox"/> False	<input type="checkbox"/> True <input checked="" type="checkbox"/> False

Case Study: **Perceived Loss**

Find the number of **Real** **Roots** **of** **the** **Equation** **in** **Complex** **and** **Identify** **the** **Number** **of** **Real** **Roots** **of** **the** **Equation** **with** **a** **Complex** **Root** **of** **the** **Form** **$a + bi$** **with** **a** **Positive** **Real** **Part** **of** **a** .



- Before finding the **_____** **is**
- After finding the **_____** **is**

Rechnungsabgrenzung:

- Effektivwertabgrenzung
- Ein- und Zweifachabgrenzung
- Transparenzformeln
- **Wiederholungsabgrenzung**
- **Abgrenzung der Kosten**

Ergebnskonten:

- **Ergebnkonten**
- **Ergebnkonten**
- **Ergebnkonten**
- **Ergebnkonten**
- **Ergebnkonten**
- **Ergebnkonten**

Key Theme for Day 4: Strategy, Innovation, and Project Development

Module 4: Strategy, Innovation, and Project Development

and that the business strategy thinking and implementation of a business strategy are not the same.

4.1 Learning Objectives

1. Understand the overall business strategy.
2. Develop a strategic business strategy.
3. Develop a business strategy.
4. Apply the business strategy to the business.

4.2 Content

Business strategy and its implementation.

Business Strategy	Business Strategy
Business Strategy	Business Strategy
Business Strategy	Business Strategy
Business Strategy	Business Strategy
Business Strategy	Business Strategy

4.3 Instructional Case Study

The business strategy and its implementation are not the same. The business strategy and its implementation are not the same.

1.1 Budgeting/Forecasting/Investment Decisions

Concept 1: Newsworth-Strategy Budgets & Operations (20 minutes)

- Explain how it is in calculating resource needs and managing changing budgets.
- Illustrate how a budget is prepared for a project (e.g., a new product, a new plant).

Activity: Forecasting for a Division

Exercise 1: Forecasting for a Division

- Identify how a budget is developed for a project (e.g., a new product, a new plant).
- Explain how a budget is prepared for a project (e.g., a new product, a new plant).

Explain how a budget is prepared for a project (e.g., a new product, a new plant).

Case Study: Forecasting for a Division

Objective: The case study focuses on the development of a budget for a project (e.g., a new product, a new plant).

Activity: Forecasting for a Division (20 minutes)

- Explain how a budget is prepared for a project (e.g., a new product, a new plant).
- Illustrate how a budget is prepared for a project (e.g., a new product, a new plant).

Resource: Forecasting for a Division

Concept 2: Project Budgeting/Forecasting/Investment Decisions

- Explain how a budget is prepared for a project (e.g., a new product, a new plant).
- Illustrate how a budget is prepared for a project (e.g., a new product, a new plant).

Explain how a budget is prepared for a project (e.g., a new product, a new plant).

Explain how a budget is prepared for a project (e.g., a new product, a new plant).

Residual $\hat{e}_i = y_i - \hat{y}_i = y_i - (a + bx_i)$ (1)

Sum of squares $\sum_{i=1}^n (y_i - \hat{y}_i)^2 = \sum_{i=1}^n (y_i - a - bx_i)^2$ (2)

- Minimize sum of squares of residuals (2) wrt a and b (1) (e.g., calculus)
- Residuals sum to zero

$\sum_{i=1}^n \hat{e}_i = 0$ (3) (residuals are orthogonal to the regression line)

Adjust R -squared value

Key Theme for Day 5: Presentation, Final Assessment, and Next Steps

Module 5: Presentation, Final Assessment, and Next Steps

Final Review and present your projects to the community using evidence-based marketing strategies.

5.1 Learning Objectives

1. Apply evidence-based marketing strategies.
2. Create final marketing strategies.

5.2 Content

Final review and marketing strategy

Individual Level	Collective Level
Review representation tool	Review transformation roadmap
Case adaptation strategies	Emerging marketing strategies
Final Assessment	Final presentation feedback
Marketing strategy for project	Culture study illustration

5.3 Individual/Small Case Work

Review marketing strategy, review individual and group final marketing strategy, and create marketing strategy for project.

5.4 Marketing Strategy Development

Project Final Project: Marketing Strategy Development

- Apply evidence-based marketing strategies to present your final culture study illustration and strategy.
- Receive feedback from students and peers.

Marketing Strategy Development: Final Review

Session 2 Plan (Assessment and Key Takeaways/Reflections)

- Conduct a SWOT analysis (strengths, weaknesses, opportunities, and threats) and strategic concepts.
- Review the organizational structure for innovation.

Activity 1: Group Exercise

Session 2 Worksheet (at a local workshop/supplies for students)

- Review students' SWOT analysis (strengths, weaknesses, opportunities, and threats) and strategic concepts.
- Review students' organizational structure for innovation.

Conclusion and Certification Summary (20 Minutes)

- Review the key takeaways from the session.
- Review the key takeaways from the session (strengths, weaknesses, opportunities, and threats) and strategic concepts.
- Review the key takeaways from the session (strengths, weaknesses, opportunities, and threats) and strategic concepts.
- Review the key takeaways from the session (strengths, weaknesses, opportunities, and threats) and strategic concepts.

Abbreviations

Acronyms	Full Name / Description
AI	Artificial Intelligence
AMR/AMRr	Antimicrobial Resistance / Antimicrobial Resistance
ML	Machine Learning
CGIIT	Center for Global Information Technology
NLP	Natural Language Processing
IoT	Internet of Things
MLo	Machine Learning Operations
IP	Internet Protocol
QoS	Quality of Service
SI	Software as a Service
API	Application Programming Interface
Cloud	Cloud Computing / Cloud Services / Cloud Infrastructure / Cloud Applications
Web 2.0	Web 2.0 / Social Media / User-Generated Content