**1. Introduction**

* **1.1 Motivation and Problem Statement**  
  → Why is this topic relevant? What problem is being solved?
* **1.2 Objectives and Research Questions**  
  → What is the goal? What specific questions will the thesis answer?
* **1.3 Methodology and Structure of the Thesis**  
  → How was the project conducted and how is the thesis structured?

**2. Theoretical Foundations / State of the Art**

* **2.1 Definitions and Concepts**  
  → OEE, KPIs, Industrial IoT, edge computing, database types, etc.
* **2.2 Related Work / State of the Art**  
  → What similar systems or studies exist? How is yours different?
* **2.3 Technology Overview**  
  → Machine model, data interface, IoT architecture, database choices, etc.

**3. Requirements and System Design**

* **3.1 Requirements Analysis**  
  → Functional and non-functional requirements (e.g., real-time, robustness)
* **3.2 System Architecture**  
  → Diagram + explanation of sensors, data flow, database, dashboard, etc.
* **3.3 KPI Design & OEE Model**  
  → Definition and justification of selected KPIs and how they are calculated

**4. Implementation**

* **4.1 Data Acquisition Setup**  
  → Machine interface, signal types, hardware/software used
* **4.2 Data Processing & Storage**  
  → Data preprocessing, storage format, time-series vs relational
* **4.3 KPI Computation**  
  → How raw data is turned into KPIs/OEE values
* **4.4 Visualization / Dashboarding**  
  → UI design, tool choice (e.g., Grafana), use case examples

**5. Evaluation and Discussion**

* **5.1 System Performance**  
  → How well does the system work? Accuracy, latency, stability?
* **5.2 Data and KPI Evaluation**  
  → Insights from the data (e.g., downtime causes, OEE range)
* **5.3 Limitations and Challenges**  
  → What didn’t work? What would you improve?

**6. Conclusion and Outlook**

* **6.1 Summary of Results**  
  → What was achieved?
* **6.2 Outlook / Future Work**  
  → e.g. How could this be scaled?

**7. References**

**8. Appendix (if needed)**

* Diagrams, code snippets, logs, screenshots, additional data