**Slide 1-2: Introduction (2 minutes)**

- Welcome students to ISA 401: Business Intelligence & Data Visualization

- Introduce yourself and your contact information

- Briefly mention the learning objectives for the day's class

**Slides 3-5: Course Overview and The Analytics Journey (5 minutes)**

- Explain the course design and expectations

- Discuss the difference between "canned" and "fresh" data in analytics

- Introduce the concept of the analytics journey, starting with pre-analytics

**Slides 6-9: Descriptive Analytics (8 minutes)**

- Define descriptive analytics and its importance in understanding data

- Show examples of descriptive statistics and visualizations

- Emphasize how visualizations can reveal patterns in data

**Slides 10-12: Predictive and Prescriptive Analytics (5 minutes)**

- Explain predictive analytics and its role in forecasting outcomes

- Discuss the importance of data quality and model selection

- Introduce prescriptive analytics and its role in decision-making

- Use the trucking company example to illustrate practical applications

**Slides 13-19: Course Structure and Objectives (10 minutes)**

- Present the curriculum overview and how it prepares students for the analytics journey

- Discuss the course objectives in detail

- Show the job ad example to demonstrate the practical relevance of the course

- Share alumni testimonials to motivate students

**Slides 20-22: Introductions and Learning Objectives (10 minutes)**

- Share your background and research interests

- Conduct an interactive session to get to know students' learning objectives

**Slides 23-31: Data Visualization (15 minutes)**

- Define data visualization and its goals

- Present examples of different types of visualizations (record information, analyze data, reveal patterns, communicate ideas)

- Conduct the non-graded activity on slide 31 to engage students in analyzing a visualization

**Slides 32-35: Business Intelligence (8 minutes)**

- Introduce the concept of Business Intelligence

- Explain the BI process and its components

- Discuss how BI transforms data into actionable insights

**Slides 36-40: Recap and Assignments (7 minutes)**

- Summarize the main points covered in the lecture

- Review class notes and recording availability

- Discuss required readings and assignments

**Cholera Outbreak Example (Slide 28):**

This slide showcases Dr. John Snow's groundbreaking work during the 1854 cholera outbreak in London. Snow, a physician, was skeptical of the prevailing "miasma" theory of disease transmission and suspected that cholera was spread through contaminated water.

To test his hypothesis, Snow created a map of the Soho area of London, marking the locations of cholera deaths with dots. He also marked the locations of water pumps in the area. The resulting visualization clearly showed a cluster of cholera cases around the Broad Street pump.

This simple yet powerful visualization allowed Snow to identify the source of the outbreak and convince authorities to remove the pump handle, effectively ending the epidemic. This work is considered one of the founding events of the science of epidemiology and a classic example of using data visualization to reveal patterns and solve real-world problems.

The image on the slide is a schematic representation of Snow's original map, highlighting the concentration of cases (black dots) around the contaminated pump (larger circle).

**Minard's Map Example (Slide 30):**

This slide features Charles Joseph Minard's famous 1869 chart depicting Napoleon's disastrous Russian campaign of 1812. Often cited as one of the best statistical graphics ever drawn, this visualization combines multiple variables in a single two-dimensional image.

The chart shows:

1. The size of Napoleon's army (depicted by the width of the colored band)

2. The geographic route of the army's advance and retreat (shown by the path of the band)

3. The locations the army passed through (marked with names)

4. The temperatures during the retreat (shown in the graph at the bottom)

5. The dates of the retreat (also in the bottom graph)

The beige band shows the size of the army as it marched to Moscow, while the black band shows the size during the retreat. The drastic reduction in width powerfully illustrates the devastating losses suffered by Napoleon's forces.

This visualization is remarkable for its ability to combine six types of data in a single image, telling a complex story of military disaster influenced by geography, time, and weather. It's a prime example of how effective data visualization can communicate multiple dimensions of information clearly and emotionally.

Both of these examples demonstrate the power of data visualization to reveal patterns, communicate complex ideas, and drive decision-making – key themes in your course on Business Intelligence and Data Visualization.