MODULE 1: INDUSTRIAL ENGINEERS AT WORK

1- What Do Industrial Engineers Do?

2- Different Fields Different Tasks

3- A Day in the Life of an Industrial Engineer

In this module, you will be able to:

- ∉ Explain the core concepts of industrial engineering.
- Describe the various subjects and disciplines within the field of industrial engineering
- Illustrate the daily responsibilities and routines of different types of engineers.
- Differentiate between the tools and systems used by engineers in various fields
- Assess the importance of data in making informed decisions for industrial engineers.
- Formulate a compelling argument for the relevance of industrial engineering in modern industry.

UNIT 1: WHAT DO INDUSTRIAL ENGINEERS DO?

In this unit, you will be able to:

- Define what industrial engineering is.
- Analyze different subjects taught in industrial engineering departments.
- Rate and describe places where industrial engineers work.
- Recognize common tools used by industrial engineers.

KEY CONCEPTS:

- Industrial Engineer
- Working areas
- Teamwork
- Problem Solving
- Engineering Tools

Warm Up

Task 1A: Work with your partner. Ask and answer these questions.

1. How many ✓ do you have?
2. Which quality is your best?
3. Which quality do you want to improve?

Good Industrial Engineers are:

good at solving problems
good at working in a team
organized
good at time management
creative
patient
careful
helpful
good with people and machines

Reading

Task 2A: Look at the five places below. Imagine you are an industrial engineer. Rank them from 1 (best) to 5 (least good) for your future job.

Factory: _____

Hospital: _____

Office: _____

Airport: _____

Theme Park: _____

Task 2B: Discuss with your partner and answer these questions:

1. What is your number 1 place? Why?
2. What is your last place? Why?

Write 3–4 sentences about your favorite place to work as an industrial engineer.

“I want to work in a _____. I think it is a good place for industrial engineers.

They can help with _____. I also like this place because _____.”

Emma: Hey Jack, I saw a video about industrial engineers yesterday, but I still don’t really get what they do. Do you?

Jack: Yeah, I do. Industrial engineers make work and systems better. They try to help people and companies save time, money, and materials.

Emma: Oh really? How do they do that?

Jack: They look at how people, machines, and tools work together. Then they find ways to improve the system. For example, they ask, “Can we finish this job faster?” or “How can we make this workplace safer or more comfortable?”

Emma: So they work in factories?

Jack: Yes, but not just factories. They also work in hospitals, offices, airports, warehouses—even theme parks!

Emma: Theme parks? That's surprising.

Jack: Yeah! They help make lines shorter and improve the way people move around the park. They try to make everything faster and more organized.

Emma: That sounds smart. What do they do in a hospital?

Jack: They plan better schedules for doctors and nurses. That way, more patients get help and the hospital runs smoothly.

Emma: Do they need special skills?

Jack: Definitely. They use math, science, and computers to solve problems. But they also need to talk to people and listen to ideas.

Emma: I didn't know that. So they don't just work with machines?

Jack: No, they work with people too. They talk to workers, managers, and teams. Then they make plans, test their ideas, and improve the system.

Emma: Sounds like they have a big job.

Jack: Yeah. This job is great for people who enjoy solving problems, thinking clearly, and helping others.

Emma: Hmm… I like planning and organizing. Maybe I should become an industrial engineer!

Jack: I think you'd be great at it!

Task 2C: Read the dialogue again. Then complete the chart using the correct words. You can scan the text to find your answers.

What They Use	**Where They Work**	**What They Do**
Math, science,	Factory, hospital, airport	Make plans, try ideas,
_____	_____	_____

Task 2D: Complete the sentences with the words from the box.

tools – faster – schedules – systems – problems

Industrial engineers work to make work and _____ better.

They find ways to finish tasks more _____.

At hospitals, they organise better _____ for the staff.

They study how people, machines, and _____ work together.

Their job is to find smart ways to fix different _____.

Task 2E: Read each place and match it with the correct task.

Place	**What They Do**
Hospital	A. Make lines shorter
Factory	B. Plan better work schedules
Airport	C. Improve how workers and machines work
Theme Park	D. Help people move easily around the area

Task 2F: Close your books. Work in pairs. Ask and answer these questions from memory.

Where did Emma see the video?

What do engineers plan in hospitals?

What do they use to solve problems?

What does Emma say she likes at the end?

Listening

Task 3A: Work with a partner. Ask the questions. Your partner answers Yes or No. Then switch roles.

Question	Your Partner's Answer
1. Do you like solving problems?	Yes / No
2. Do you like organizing your desk or room?	Yes / No
3. Do you enjoy working in a team?	Yes / No
4. Do you try to save time in daily life?	Yes / No
5. Do you get annoyed when things are slow or messy?	Yes / No
6. Do you think machines make life easier?	Yes / No
7. Do you notice problems in shops, hospitals, or airports	Yes / No
8. Would you like to make workplaces better for people?	Yes / No
9. Do you enjoy learning how things work?	Yes / No

10. Would you like to design a new system or machine? Yes / No

Task 3B: Listen to the audio about Zoe. Tick the words when you hear them

university	nervous	classroom	library	homework	lab
football	ruler	painting	teacher	project	math

Task 3C: Listen to the audio again. Then read each sentence. Write T if the sentence is true F if the sentence is false.

1. Zoe is a first-year student. ___
2. She knew many people on the first day. ___
3. Her favorite class is technical drawing. ___
4. She joined a study group with four students. ___
5. They meet every day in the lab. ___
6. Zoe enjoys working in groups. ___
7. She uses a ruler in technical drawing. ___
8. She wants to help design better traffic systems. ___
9. She wants to become a teacher one day. ___

Task 3D: Think about the clues from the listening. What things do you think are inside her backpack? Draw or write 5 things Zoe might carry in her backpack.

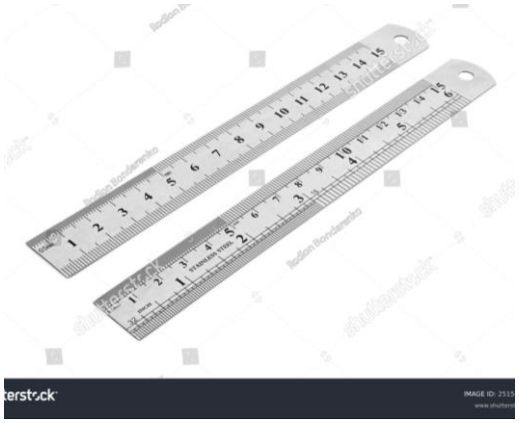
Task 3E: Work in pairs. Show them Zoe's backpack. Then, talk about your own backpack. What is the same? What is different?

Different Items	Similar Items

Reading

Task 4A: Work in pairs. Look at the pictures. Ask and answer the questions below:

1. Do you use these tools at home or school?
2. What do you use them for?
3. How often do you use them?
4. Which one is your favorite? Why?



Join Our Team: Tools You Need as a New Industrial Engineer

SmartFlow Industries is hiring new industrial engineers. Do you enjoy solving problems, planning tasks, and helping teams work better? Then this job may be right for you. To work well, you also need to use some important tools. Here are the tools we use every day.

Microsoft Excel

We use Excel to work with numbers. You can make lists, count items, and plan daily tasks. For example, engineers use Excel to track how many products the factory makes each day.

Flowcharts

A flowchart shows the steps in a job. It helps engineers understand how work happens. Engineers can draw flowcharts on paper or on a computer using software like Visio.

Stopwatch

Engineers use a stopwatch to check how long a task takes. This helps them make work faster and better. Time is important in all workplaces.

5S System

We use 5S to keep work areas clean and safe. The five parts of 5S are:
Sort – remove things you don't need
Set – put tools in the right place
Shine – clean your space
Standardize – follow the same rules
Sustain – keep doing it every day

Project Apps

Engineers use project management apps like Trello. These apps help them plan work, write down tasks, and see deadlines. They make teamwork easier.

If you want to become a good industrial engineer, learn how to use these tools. They will help you work smarter, save time, and improve systems.

Task 4B: Match the sentence beginnings (A–F) with the correct endings (1–6).

A. A good industrial engineer uses tools to…	**1.** they want to keep the space clean and safe.
B. Engineers count products because…	**2.** plan tasks, solve problems, and save time.
C. The company needs workers who…	**3.** they want to show the steps in a job.
D. Engineers use project apps when…	**4.** they need to check the work process.
E. The 5S system helps when…	**5.** they want to know how much the factory makes.
F. Flowcharts help engineers...	**6.** like teamwork, planning, and problem-solving.

Task 4C: Read each sentence. Write the name of the correct tool.

1. You want to see how long a worker takes to finish a job. → _____

2. You want to make a list and count products. → _____

3. You want to plan a big team project online. → _____

4. You want to draw the steps of a job. → _____

5. You want to organize your desk better. → _____

Task 4D: Work in pairs. Read the problems below. For each problem, choose 1 or 2 tools from the reading. For each problem, discuss:

- What is the problem?
- Which tool(s) do we use?
- How do we use the tool(s) to fix it?

1. The workers don't count the boxes in the factory. The manager doesn't know how many boxes they make each day.

2. The work area looks messy. Workers can't find the tools. They lose some tools.

3. The workers take too long to finish one simple task. The manager thinks they work too slowly.

4. The team forgets some important tasks. They don't finish the project on time.

5. New workers don't understand the job. They don't know the steps.

6. The workers put too much paper and junk in the office. They waste time looking for things.

7. Two teams want to work together, but they don't know who does each task.

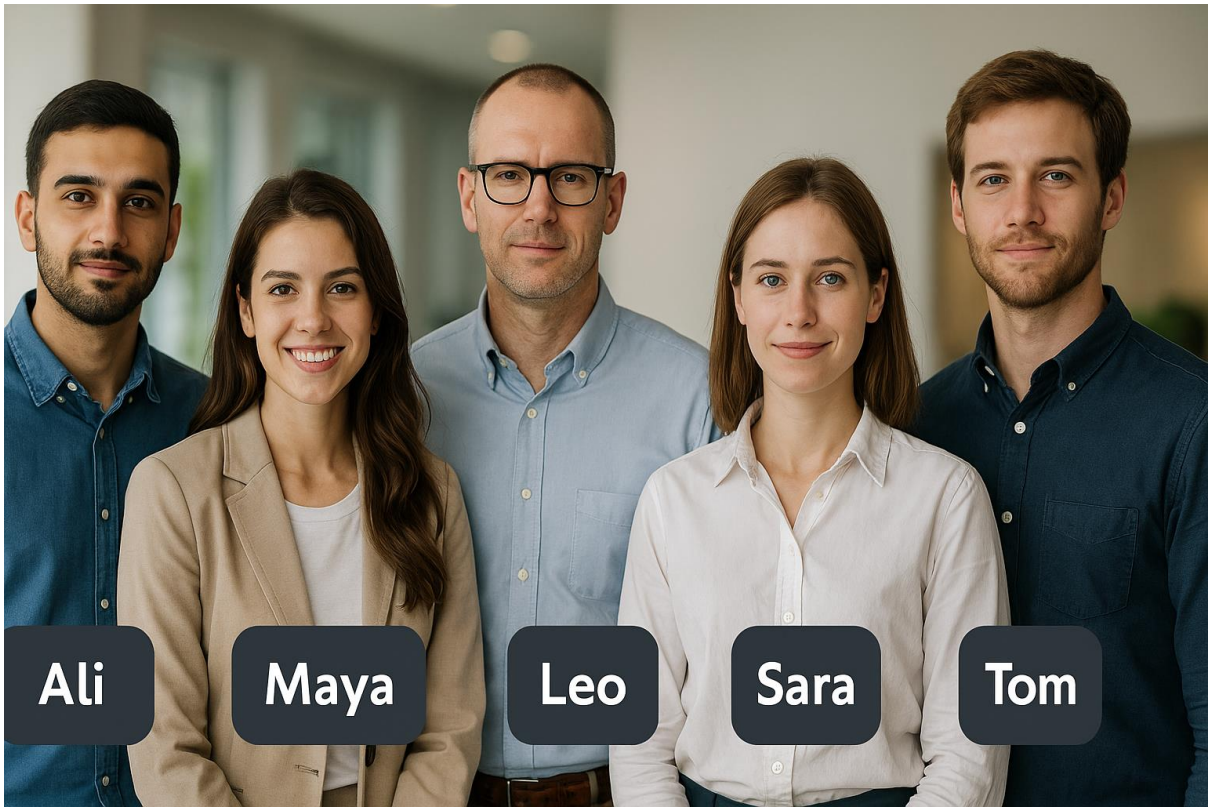
8. The engineer wants to clean and organize the space with a smart plan.

Task 4E: Work in groups of 3–4, read about the five candidates, talk about their tools, strengths, and weaknesses, then choose one person to hire and say why. Discuss the questions:

Who is the best person for the job? Why?

What strengths are most important for an engineer at SmartFlow?

What tools should every new engineer learn first?



Name	Tools Known	Strengths	Weaknesses
Ali	Excel, Flowcharts	Works fast, quiet, good at numbers	Doesn’t like teamwork, shy in meetings
Maya	Trello, Stopwatch	Good team worker, likes planning	Not good with numbers, works slowly sometimes
Leo	5S System, Flowcharts	Very organized, clean desk, follows rules	Doesn’t like using computers
Sara	Excel, Trello	Loves solving problems, has ideas for better systems	Forgets deadlines, gets distracted easily
Tom	Stopwatch, 5S System	Works carefully, always on time	Doesn’t like planning, weak computer skills

Real Life

Task 5A: Industrial engineers work in many sectors, from improving factory systems to optimizing hospital processes.

1- Find Two Industrial Engineers

- Search for Industrial Engineers on LinkedIn.
- Choose two professionals with different careers (e.g., one in manufacturing, one in logistics or tech).
- Take notes on their education, job experience, and key skills.

2- Analyze Their Career Path

- What did they study?
- What was their first job?
- Where do they work now?

3- Identify Key Skills & Certifications

- What technical and soft skills do they have?
- Do they have any certifications or extra training?

4- Compare Their Career Journeys

- How are their careers similar or different?
- What skills or experience do you need for a similar job?

5- Create Your Own LinkedIn Profile

- Now, create a LinkedIn profile to prepare for your future career.
- Include:
  - Your name and student title (e.g., Industrial Engineering student at [Istinye University])
  - A short summary about your interests and future goals

-Your current education and expected graduation year

-Any projects or research you would like to do in the future

6- Present Your Findings

- Write a short report (1 page) or make a 3-5 slide presentation.

Vocabulary

Task 6A: Work with a partner. One student rolls the dice. Read the word and do the task with your partner. Then switch roles and repeat.

Roll	Word	Pair Task
1	Schedule	Ask your partner: *"What's your daily schedule?"* Take notes.
2	Count	Count 10 things in the room together (e.g., chairs, books).
3	Management	Talk about someone who manages something well (e.g., your teacher, a boss).
4	Task	Ask each other: *"What's one task you do at home/school?"* Share and compare.
5	Skill	Tell your partner one skill you have. Ask: *"What is your best skill?"*
6	Patient	One of you is a patient, the other is a doctor. Act out a short 2-line roleplay.

UNIT 2: DIFFERENT FIELDS DIFFERENT TASKS

In this unit you will be able to:

- Define different types of engineers and their roles.
- Explain the daily responsibilities of different engineers.
- Identify tools and systems used by engineers in various fields.
- Design a simple step-by-step system for a daily activity.

KEY CONCEPTS:

- Types of engineering
- Engineering responsibilities
- Engineer qualities
- Teamwork

Warm Up

Task 1A: Work in pairs. Which types of engineering do you know? Write their names to the boxes. Discuss what you know about them and guess their responsibilities.

Task 1B: Work in pairs. Read the case. Match the jobs below with the correct engineer.

A company is building a new factory. They need help from different engineers. First, they need strong roads and a parking area. Next, they want fast machines. The machines must not break easily. They also want to save time and use workers and machines better. The manager asks for a mobile app to check daily tasks. The building also needs safe electricity.

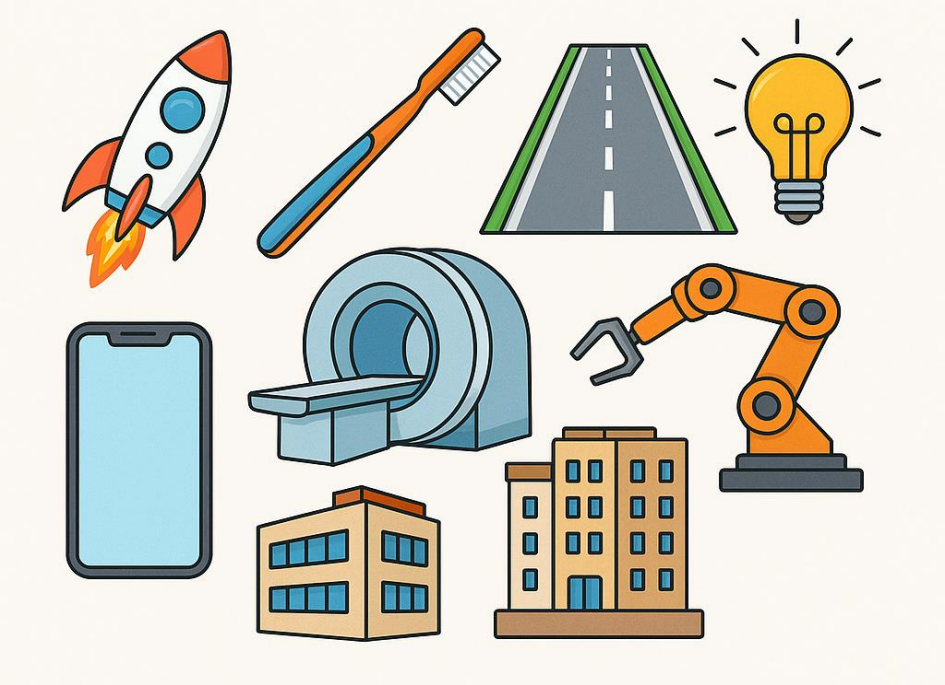
Job	Engineer
Build roads and parking	Software Engineer
Create the mobile app	Civil Engineer
Make machines that work fast	Electrical Engineer
Help workers and machines work better	Industrial Engineer
Give safe electricity to the building	Mechanical Engineer

Reading

Task 2A: Read the fact below and in pairs discuss the questions**.**

🧠 **Did You Know?**

An ordinary person uses at least 50 engineering-designed products every single day often without even noticing!



1. Which of these things do you use in daily life?

2. Which one do you think is the most difficult to design?

3. What kind of engineer might work on each one?

Meet the Engineers: A Look into Five Fields

From Future Engineers Monthly – Student Edition

Engineering is a large field. Engineers do many different jobs in the world. They solve problems, design systems, and help people in everyday life. In this article, we meet five engineers who work in different areas: civil, software, biomedical, mechanical, and industrial. Each person shares what they do and why they enjoy their work.

Ada – Civil Engineer
Ada lives in Ankara and works for a large construction company. She designs bridges, buildings, and roads. She visits construction sites, checks materials, and makes sure workers follow safety rules. “I enjoy drawing big projects and then seeing them become real,” she says. Ada works with other engineers and architects to make sure everything is strong and safe.

Can – Software Engineer

Can works at a tech company. He writes code for mobile apps and websites. He meets with teams to learn about problems and goals. Then, he creates programs that help users do things faster and easier. “My job is creative. I can build anything with code,” he explains. Can uses tools like Python and Java every day.

Zeynep – Biomedical Engineer
Zeynep works in a hospital research lab. She helps doctors and patients by designing medical tools. She also repairs machines like ultrasound and MRI scanners. “I love science and technology. My work helps people live healthier lives,” she says. Zeynep understands both biology and machines, and that makes her job very special.

Bora – Mechanical Engineer

Bora works in a factory that makes car parts. He builds and tests machines. He solves technical problems and finds ways to improve production. “I always ask how machines work and how I can make them better,” he says. Bora uses design software and tools like 3D printers in his daily work.

Aslı – Industrial Engineer

Aslı works in an office. She helps companies plan their time, people, and materials. She organizes work steps, finds faster ways to do jobs, and helps teams stay on schedule. “I connect people and systems,” she says. Aslı also uses charts, apps, and time-tracking tools to make workplaces more efficient.

Engineers work in different places and on different projects. Some use machines, others use computers or tools. But they all try to solve problems and make things better. Whether they build a hospital machine or a city road, engineers shape how we live and work.

Task 2B: Read each sentence. Decide if it is “yes” or “no” based on the article.

	Statement	**Yes / No**
1.	Ada uses a computer to write code for websites.	
2.	Zeynep helps both doctors and patients.	
3.	Bora builds machines for hospitals.	
4.	Aslı works alone in a lab with medical tools.	
5.	Can talks to other people before he starts writing programs.	
6.	Ada’s job includes visiting places where buildings are being made.	
7.	Bora and Can both work in factories.	

8. Zeynep knows how machines work and also understands biology.

9. Aslı wants workers to be slower and more careful.

10. All five engineers work in the same company.

Task 2C: Read the statements below. Each one sounds like something an engineer from the article would say in real life. Match each statement to the correct engineer.

1. “The new highway design is almost ready!” _____
2. “This app update will make life easier for users.” _____
3. “The ultrasound machine is working again!” _____
4. “Let’s speed up the production line.” _____
5. “Team A should finish their task by noon.” _____

Task 2D: Work in pairs. Pick one engineer and imagine you are them. Your partner will ask you 3 questions about your job. Answer in full sentences. Your partner will try to guess your engineering field.

- What tools do you use every day?
- What is the most exciting part of your job?
- How does your work help people?

Watching

Task 3A: Discuss in pairs. Look at the picture. What problems can happen in each place? Share your ideas with your partner.

What is Industrial Engineering?

Task 3B: Watch the video. What is the video mostly about? Choose the best answer.

a) How robots are made.
b) Different types of engineers.
c) What industrial and systems engineering is.
d) How to get a job in engineering.

Task 3C: Which title do you think is the best for this video?

a) Robots are Taking Over
b) Become a Different Engineer
c) Why Industrial Engineers Matter
d) The Future of Water Delivery

Task 3D: Watch the video again. Fill in the missing words based on what you hear.

1. Industrial engineers help systems work _____ and more smoothly.
2. These engineers focus on the big _____, not just one part.
3. They think about how to send products to the right place at the right _____.
4. Data is very important. Engineers use it to make better _____.
5. Industrial engineers don't only fix problems; they try to _____ them before they happen.
6. They ask questions like "What if there is a fire or a _____?"
7. If you enjoy working with numbers and _____ people, this job may be for you.
8. This job is not only about machines – it's also about working with _____.
9. Many industries want to hire these engineers because their _____ are growing.

Task 3E: Look at the list. Tick (✓) qualities good for industrial and systems engineering.

___ Good at sports

___ Good at math

___ Open minded

___ Likes to cook

___ Likes to think broadly

___ Enjoys working with data

___ Cares about people

___ Has a broad range of interests

___ Wants a career with flexibility

Task 3F: Work with a partner. Think about something very simple you do every day, like:

- Getting ready for school in the morning.
- Packing your school bag.
- Getting a snack from the kitchen.

Talk about the "steps" or the "system" for one of these things. How do you do it, step-by-step? Draw the steps together to show your "system."

Step 1	**Step 2**	**Step 3**

Step 4	**Step 5**	**Step 6**

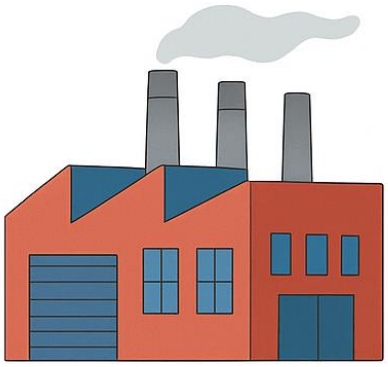
Listening

Task 4A: Read the case below and then discuss the following questions in pairs.

You walk into a supermarket. It's out of everything. No bread. No milk. No fruit. No workers know what's happening. The truck didn't come. Nothing is organized

1. What would you do as a customer in this situation?
2. What do you think this supermarket needed to prevent this problem?

Task 4B: Listen to the podcast. Write numbers 1 to 4 on each picture to show the order they are mentioned.



Task 4C: Listen to the podcast again**.** Write down 5 words that describe what industrial engineers do. After listening, compare your list with your partner. Are your words more about people, time, systems, or places?

Task 4D: Match the problem with the result

Problem	Result
Machines not ready	Long hospital wait
Checkout line too long	Engineer changes schedule
Too many people at lunch	Add self-checkout
Security team confused	Miss your flight

Task 4E: Then answer in pairs:

1. The speaker says _____ What does “invisible problems” mean?

_____

2. Can you think of another real-life problem that industrial engineers might solve?

_____

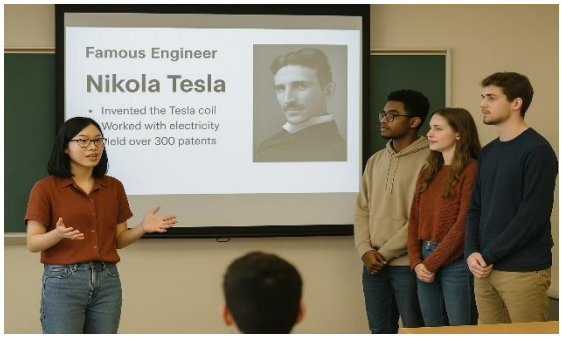
3. What would happen if there were no industrial engineers in your school, city, or country?

_____

Real Life

Task 5A: Work in groups. Choose one famous engineer. Find answers to these questions. Then make a simple poster or slide (with pictures and 4–5 sentences). Present to the class.

1. What is their name?
2. What kind of engineer are they?
3. What did they design or invent?
4. What problem did they solve?
5. Why is their work important?



Vocabulary

Task 6A: Unscramble each word. Read the meaning. Write the correct word next to its definition. Then fill the blanks in the sentences.

1. icenost → _____

You see or become aware of something.

2. irdnaory → _____

Normal; not special or different.

3. ctunsoocirn → _____

The process of building something (like a road or building).

4. niptduocro → _____

The process of making something (especially in a factory).

5. teffniecfi → _____

Doing something well, quickly, and without waste.

6. blveisinii → _____

Something you cannot see.

Task 6B:
The toy factory stopped _____ because of a power problem.
Superheroes in movies often wear _____ cloaks to disappear.
She felt like an _____ student, but her ideas were actually very creative.
I didn't _____ the new chair in the room it looks just like the old one!
This machine is more _____ than the old one. It saves time and energy.
The new mall is still under _____. It will open next year.

UNIT 3: A DAY IN THE LIFE OF AN INDUSTRIAL ENGINEER

In this unit you will be able to:

- Describe what industrial engineers do in one day.
- Explain how they work with systems and people.
- Identify their routines and daily tasks.
- Analyze what data is and why it is important for industrial engineers.

KEY CONCEPTS:

- Daily tasks
- Communication
- Teamwork
- Data Use

Warm Up

Task 1A: Write your daily routine. Include at least 4–6 activities.

Task 1B: Work with a partner. Imagine and write a daily schedule for an industrial engineer. Think about their tasks at work. Show your engineer's timeline to the class. Explain the main tasks and times. Compare with your own daily routine.

Reading

Task 2A: Imagine you can meet an industrial engineer and ask them anything you want. What do you want to learn about this job? Write your three questions for the engineer.

Task 2B: Share your questions with your partner. Try to answer each other's questions using your own ideas.

Student: Hello! Thank you for helping me. I have a homework project about jobs. Can you tell me about your work?

Engineer: Of course! I work as an industrial engineer. I help factories work better and faster.

Student: What do you do on a normal day?

Engineer: I usually start work early in the morning. First, I drink my coffee and check my emails. I read the daily plan and think about my main tasks. Then, I meet with my team. We talk about the work for the day and any problems in the factory.

After the meeting, I walk around the factory to check the machines and talk to the workers. I ask questions and try to help if they have any problems. Sometimes, I take notes about machine issues or slow production.

Later, I go back to my office to look at data and reports. I study the numbers and try to find ways to improve the work. I also write short reports for the managers and share my ideas.

During the day, I often talk to different people, workers, team leaders, or managers. Good communication is very important in my job.

In the afternoon, I sometimes have more meetings or call suppliers to ask about new machine parts. At the end of the day, I will write a short plan for tomorrow.

Student: It sounds like a busy day!

Engineer: Yes, it is! But I enjoy my job because I solve problems and help the team. Every day is different, and that makes it interesting.

Task 2C: Read the conversation above and put the sentences in the correct order to show the engineer's working day.

a) He writes a short plan to get ready for the next day before leaving.
b) He moves around the factory to look at equipment and chat with employees.
c) He talks to his team about the work schedule and any challenges.
d) He enjoys a hot drink and checks new messages at the start of the day.
e) He sometimes joins extra meetings or calls suppliers about parts.
f) He sits at his desk to look at production results and prepare short reports.
g) He speaks with different people like managers, team leaders, and workers during the day.

1- ___
2- ___
3- ___
4- ___
5- ___
6- ___
7- ___

Task 2D: Read each sentence carefully. Choose the correct word.

1- The engineer (begins / finishes) his workday when most people are still at home.

2- He always checks important (letters / emails) to see what needs to be done first.

3- After meeting his group, he moves around the (factory / meeting room) to see how things are going.

4- When he finds a technical problem, he writes short (notes / stories) to remember later.

5- Back at his desk, he looks at different (figures / pictures) to find ways to make work faster.

6- He often shares his thoughts with (visitors / leaders) to make new plans for the team.

7- In the later part of the day, he might have extra (talks / meetings) or contact people who sell machine parts.

8- Before leaving, he prepares a small (plan / letter) so he is ready for the next morning.

Task 2E: Read the quote from the text again and then each short conversation. Write who the engineer is talking to: Worker, Team Leader, Manager, or Nobody.

"During the day, I often talk to different people, workers, team leaders, or managers. Good communication is very important in my job."

……. — Can you help me fix this machine? — Yes, let me check it now.	**…….** — We need to talk about the plan for next week. — Okay, let's make a new schedule together.	**…….** — Your report was very clear. Thank you for your ideas. — I'm happy it was useful!
……. — How many cookies do you want today? — Hmm, I think I will take two.	**…….** — Some workers don't understand the new rules. — I will explain everything again today.	**…….** — The machines are very slow today. — Yes, I saw that. We will try to fix it.

Task 2E: Work in pairs. Read the situations below. All of them can happen in the engineer's day. Discuss with your pair: What can the engineer do? How can he solve the problem? Write one short solution for each situation.

Task 2F: After you finish, share your ideas with another pair. Find out which solutions are the same? Which ideas are new?

1. He checks the machines and finds a small problem.

_____

2. A worker does not understand the daily plan.

_____

3. The manager needs a report quickly, but the engineer is busy.

_____

4. The data from the factory is not clear.

_____

5. The supplier does not answer the phone.

_____

Listening

Task 3A: Read the statements below with your partner. Tick (✓) the sentences you agree with. Together, choose the one sentence you think is the most important for a good job. Share your answer with the class.

Planning takes time, but it helps you avoid mistakes.

Sometimes you try to fix problems by yourself first.

Talking to many people can sometimes confuse you.

Writing notes helps you remember important things.

Managers do not have to tell workers everything.

Asking questions can slow work, but it helps you learn.

You need a plan only for big jobs.

Talking about problems with your team helps you work better.

Task 3B: While you listen, write what Abraham does with each person in the table below. Use short phrases or words from the listening.

Person	**What Abraham does**
Workers	Listens to _____
Team leaders	Discusses _____
Managers	Talks about _____
Suppliers	Calls or emails to _____

Task 3C: Listen to the audio again. Choose the sentences that are true about Abraham and write "T" to the blanks.

1. Abraham writes all his plans and meetings in a notebook before he starts work. (__)
2. He thinks talking clearly helps the team finish work more slowly. (__)
3. Abraham always fixes machine problems alone, without help. (__)
4. He speaks with different people to stop problems before they get bigger. (__)
5. He sometimes forgets to contact suppliers, and this can create factory problems. (__)
6. He thinks planning is a good habit for engineering students. (__)
7. Abraham believes asking questions makes students more confident. (__)
8. He only talks to managers in the morning and doesn't talk to workers. (__)

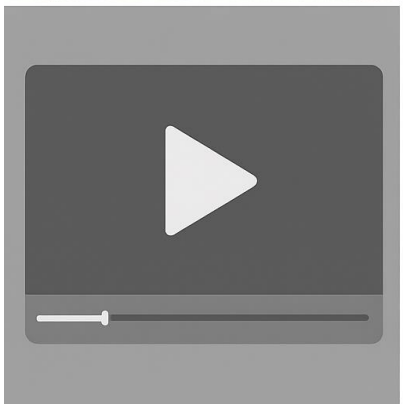
9. Abraham never uses emails to communicate with others. (__)

10. He thinks planning helps him feel less stressed during the day. (__)

Task 3D: Work in pairs. One student mimes an action from Abraham's day without speaking. The other student guesses and says the full sentence, for example: "You are checking the machines." Then switch roles.

Watching

Task 4A: Work in pairs. Look at the pictures. Say what each picture shows. Talk about what kind of information we can get from each picture.



https://www.youtube.com/watch?v=WnP6jDvupiY

Task 4B: Listen carefully and circle the word you hear.

1. Data is collected, analyzed, shared, hacked, **(bought / seen)**.
2. When we think of data, we may immediately think of **(numbers / colors)**.
3. If you research wildfires, your data might be satellite **(maps / numbers)** and images.
4. Data can be qualitative or **(quantitative / creative)**.
5. Quantitative data can be expressed as a number and counted or compared on **a (numerical / visual)** scale.
6. Qualitative data include textual descriptions, **(maps / temperatures)**, pictures, or transcripts.
7. Data are not the same as **(statistics / facts)**. Statistics are the result of data analysis and interpretation.

Task 4C: Watch the video again and write the data types.

Examples	Data Type
Satellite maps and images	
Number of graduates each year	

Textual descriptions of events

Temperature measurements

Task 4D: Work in groups. You are industrial engineers in a factory. Make a list of decisions you need to make in your job. Think about the data you need for each decision. Ask the questions and fill the chart.

- What information do I need to make this decision?
- Do we need numbers, photos, or notes?

Decision	**What data do you need?**
Buy a new machine?	*Number of machine stops, repair costs*

Real Life

Task 5A: Work in small groups. Draw a simple weekly calendar. (Monday to Friday). Choose 6 tasks for the week from this list or your own ideas. Write each task on your calendar. Put a star next to the most important task of each day.
Task 5B: When you finish, talk with another pair. Explain:

- Why you chose these tasks.
- Why some tasks are important?

TASKS

Check machines
Call supplier
Write report
Meet with workers
Plan next week's work
Check safety
Train new worker
Walk around factory

Vocabulary

Task 6A: Work in small groups. You are "engineering teams" stuck in a factory. To get out, you must finish 7 small challenges. Each person in the group must do the challenge alone. All group members must watch and say "yes" for you to pass each challenge. When you finish all challenges, say "Mission Complete!"

Challenge 1: Satellite Signal

Draw a simple picture of a *satellite* and explain (in 1–2 sentences) what it helps people do.

2- Secret Message

Write a short "communication" message to the supplier.

3- Challenge 3: Immediate Action!

Draw a small picture that shows something you must do *immediately*. Then, tell the group what it is and make a simple sentence using *immediate*.

4- Challenge 4: Employee ID

Act like an *employee* at work (e.g., using a computer, fixing a machine). Other students guess and then say one sentence.

Challenge 5: Big or Small?

Draw something you can weigh on a *scale* and something you cannot. Show it to another group.

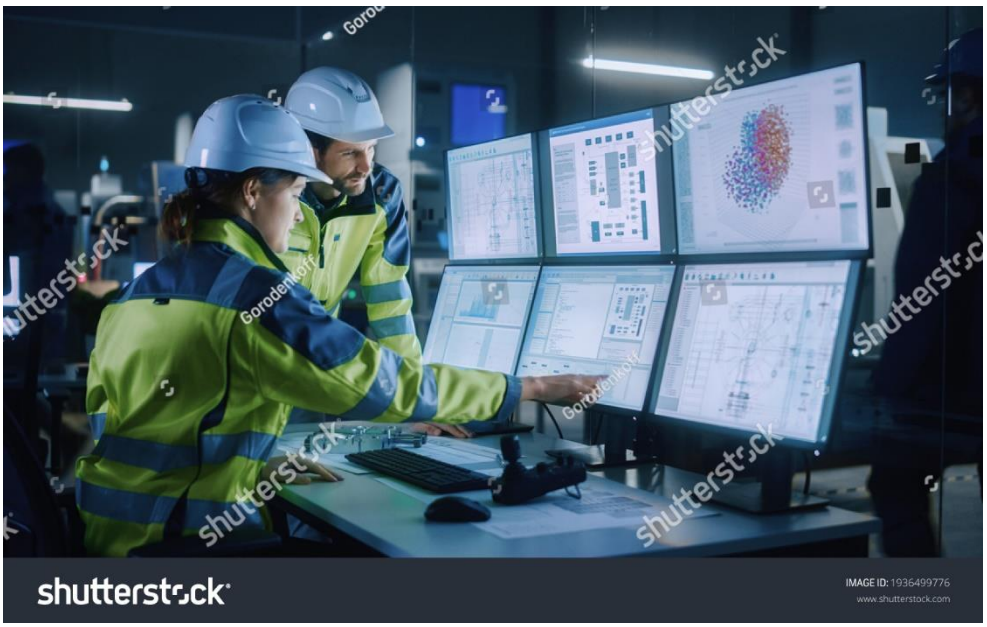
Challenge 6: Supplier Search

Find 3 objects in the classroom that a *supplier* might sell to a factory (e.g., pen, paper, tape). Say what they are.

Challenge 7: Good Habits

Draw or act out a good *habit* at work (e.g., washing hands, coming on time). Others guess and then write it down all of the group members' habits.

MODULE 2: INDUSTRIAL ENGINEERS IN DAILY LIFE



4- Behind the Shelves: Supermarkets and IES

5- Fast Food Smart Factory

6- Safety, Cleanliness, and Comfort

In this module, you will be able to:

- Understand how industrial engineers help supermarkets work better and faster.
- Explore fast-food systems and customer experiences.
- Compare the relationship between smart work systems and industrial engineering.
- Create different solutions to problems in supermarkets and factories.
- Construct new innovations for different work areas.

UNIT 4: BEHIND THE SHELVES: SUPERMARKETS AND IES

In this unit you will be able to:

- Display what industrial engineers do in supermarkets.
- Explore the skills that help engineers work efficiently in supermarkets
- Explain how supermarket systems are connected to industrial engineering.
- Evaluate real-world supermarket systems by identifying strengths and weaknesses

KEY CONCEPTS:

- Improvements
- Logistics
- Technology
- Supply Chains

Warm Up

Task 1A: List 5 things you always notice first in a supermarket. Each thing must match a different sense. Compare your list with your partner and circle the things you have in common.

Sight 	Smell 	Sound 	Touch 	 Emotion

Task 1B: Discuss in pairs:
Do you think engineers plan for you to notice these things first?
How do you think industrial engineers design supermarket entrances, shelves, or sections to catch your senses?

Reading

Task 2A: Work in pairs. Talk about these questions:

1. Have you ever written a letter or an email to someone?
2. Who did you write to?
3. Why did you write it?

Task 2B: Work in pairs. Imagine you are the supermarket manager. Think: Who sends you messages? (For example: workers, customers, engineers, suppliers) Talk about: What topics do they write about? Are they telling you problems, good things, or new ideas? Write 3 topics you think you will get messages about. Share your ideas with another pair.


Dear Mr. Ayyıldız,

I hope you are well. I want to share some updates about the improvements in the supermarket from the past two months.

First, we changed the shelf and aisle layout. Now customers move more easily around the store. We studied how customers walk and found ways to stop traffic jams. Customers can find popular items like bread, milk, and fruits much faster. Many customers spend less time searching and feel happier when they shop.

We also started using a new tracking system for inventory. This system shows us the stock levels in real time. We can order new products on time and avoid running out of important items. We also reduce waste, especially for fresh vegetables and dairy products.

We made a new staff schedule after we analyzed the busiest hours. Now we have more staff during busy times. This plan makes the checkout process quicker, lowers stress for employees, and improves customer service.

Finally, I feel very excited about the new self-checkout machines. I believe they will reduce waiting times and make shopping more fun for younger customers who enjoy technology.

Thank you for your support. Please tell me if you have any questions or ideas. I look forward to working together on future improvements.

Best regards,

Efe Deniz
Industrial Engineer

Dear Efe,

Thank you for your letter. I am very happy to read about the good changes.

Many customers say they like the new shelf layout. It is easy for them to find things. They enjoy shopping more now.

The new stock system is very good. We have less waste, and the food stays fresh. This helps us save money too.

The new work schedule helps the workers a lot. They look happy and work better. Customers also wait less in line, and they are happy.

I am excited about the new self-checkout machines. Please tell me if you need help to prepare for them. I think many people will like using them.

Thank you for all your hard work. You make the supermarket better every day.

Best wishes,
Yusuf Ayyıldız
Store Manager

Task 2B: Read Efe's letter again carefully. Underline all the sentences where Efe talks about improvements or changes. Next to each underlined sentence, write a small label to show which area it improves**.**

Layout — how the store looks and where products are

Stock — how they track and order products

Staff — how workers feel and work

Technology — new machines or tech

Task 2C: Fill in the blanks.

schedule — waste — faster — happy — technology — workers

1. Customers can find bread, milk, and fruits much _____ now.
2. The new staff _____ gives more help during busy hours.

3. Efe says the changes make customers feel _____ when they shop.
4. The supermarket now has less food _____ because of the new system.
5. The new plan makes _____ feel less tired and work better.
6. Efe thinks young customers will enjoy using the new self-checkout _____.

Task 2D: Match each change to its effect

New shelf layout → _____

New stock system → _____

New staff schedule → _____

Self-checkout machines → _____

a) Helps food stay fresh and reduces waste.
b) Makes shopping faster and more fun for young people.
c) Helps customers find products easily and move better.
d) Helps workers feel better and improves service.

Task 2E: Work in pairs. Use the ideas from the letter to draw a simple top-down map of the supermarket. Focus on the changes and draw the details.

Listening

Task 3A: Look at the picture. In pairs, talk about these questions:

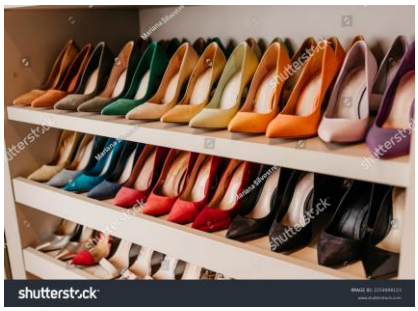
→ What do you think her job is?

→ Why is she in the supermarket today?

Task 3B: Work in pairs. You have two minutes. Write three things for each category about the supermarket. Use a timer and write quickly! Then check your partner's answers.

Category	Item 1	Item 2	Item 3
Something soft	_____	_____	_____
Something expensive	_____	_____	_____
Something to drink	_____	_____	_____
Something heavy	_____	_____	_____
Something only kids like	_____	_____	_____

Task 3C: Listen to the audio. While listening, circle the sections the speaker talks about.

A. 

B. 

C. 

D. 

E. 

F. 

G. 

H. 

Task 3C: Listen to the audio again. Fill the chart.

Section	**Engineer's Trick**	**Result for Customers**
_____	Use bright _____ and light	Feel healthy and buy more fruits
_____	Strong _____ smell at entrance	Feel hungry and buy more snacks
Aisles	Make aisles wide and easy	Walk _____ and see more products
_____	Put expensive items at _____ level	Buy popular or expensive products
Milk section	Use a _____ system for stock	Always find fresh milk
Staff schedule	Add more workers in _____	Less stress and faster service
Checkout	Add self-_____ machines	Faster and more fun shopping

Task 3D: Work in small groups (3–4 students). Imagine you are engineers designing a new supermarket. Use the ideas you heard in the listening

- Colors and lights
- Smells
- Aisle design
- Shelf placement
- Staff schedules
- Checkout design

Make a big poster or draw a floor plan. Show your ideas with drawings or simple words. Prepare a short presentation (1–2 minutes) to share your supermarket with the class. Each group member talks about one part. After presentations, all groups vote for "The Most Creative Supermarket" and "The Best Engineer Plan.

Reading

Task 4A: Work in pairs. Look at the list of subjects.
Tick ✓ the subjects you think are important for a student who wants to work in supermarkets.Talk to another pair and share your ideas.

- Geography
- Computer skills
- History
- Business and management
- Logistics and supply chain
- Customer service
- Data analysis
- Marketing
- Music
- Design
- Math

Elijah Pattinson @e_pattz · Jun 1

Hey future engineers! 🛒✨
Do you want to work in a supermarket and make it better? Here is an easy guide to help you become an engineer in a supermarket. Let's start! 👇

Elijah Pattinson @e_pattz · Jun 1

First, you need to study industrial engineering or a similar subject at university. You learn about planning, problem solving, and how to make big systems work better. These skills help you design smart and fast supermarkets. When you choose your classes, try to pick courses about supply chains, store design, or product management. These help you understand how to move products quickly, keep food fresh, and make customers happy.

Elijah Pattinson @e_pattz · Jun 1

You also need to learn to use technology. Engineers work with computers and special programs every day. You can learn Excel, Python, or design tools. These help you plan the store layout and check product data easily.

Elijah Pattinson @e_pattz · Jun 1

Real experience is very important! You can do part-time jobs or internships in a supermarket, a warehouse, or a logistics company. You learn to see real problems, help customers, and understand how the store really works.

Elijah Pattinson @e_pattz · Jun 1

Many engineers also get extra certificates. One example is Lean Six Sigma. This shows that you know how to make systems better and faster. You can also learn about supply chain or project management. This makes you stronger in your job.

Elijah Pattinson @e_pattz · Jun 1

Engineers work with numbers every day. You must learn to read data and find problems. You look at sales, stock levels, and how customers walk in the store. This helps you make smart changes to help everyone. It is good to join groups and meet other engineers. You can find student groups, online meetings, or conferences. You learn new ideas, share stories, and make new friends. Networking is a big part of learning.

Elijah Pattinson @e_pattz · Jun 1

Some students also do a master's degree in supply chain or business. This is not always necessary, but it helps you learn more and get special jobs in big companies. You can also focus on future trends and new technologies.

Elijah Pattinson @e_pattz · Jun 1

After university, you start with a simple job in a store or as an assistant. Later, you can grow step by step to be a team leader, engineer, or manager. You learn every day and get better with each job.

Task 4B: Read the words below. Put each word in the correct group: Tools or Skills.

Data analysis, Design tools, Excel, Using programs, Reading data, Planning, Python, Talking to people
Problem solving, Teamwork, Store layout design, Networking

Tools	**Skills**

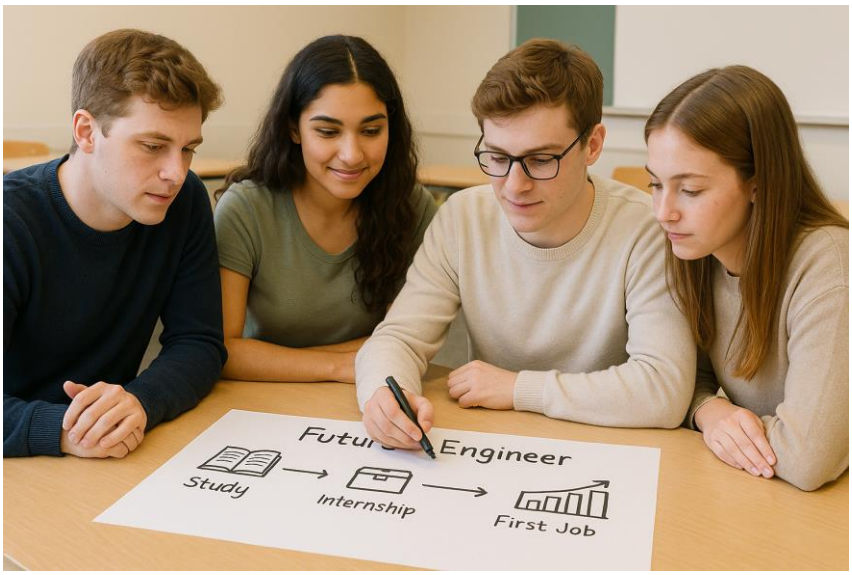
Task 4C: Read the sentences. Write True if the sentence is correct. Write False if the sentence is not correct.

1. Engineers learn about planning and problem solving at university. (___)
2. It is not important to study product management if you want to work in a supermarket. (___)
3. Engineers use computers and special programs to help in their work. (___)
4. Doing an internship helps you learn about real problems in a store. (___)
5. Lean Six Sigma is a certificate that helps engineers improve systems. (___)
6. Engineers never look at sales or stock data in their job. (___)
7. Joining groups and meeting other engineers is a good way to learn new ideas. (___)
8. All students must do a master's degree to work as an engineer. (___)
9. You can start with a simple job and later become a manager or team leader. (___)
10. Engineers think about how customers move in the store to make it better. (___)

Task 4D: Write the correct word from the reading. Use the letter hints to help you.

1. To make better: _ _ _ _ _ _ e
2. Extra study after university: m _ _ _ _ _ _ _ _ _ _ _ _
3. People who shop in a store: _ _ _ _ _ _ _ r _
4. Short work at a company while studying:_ _ _ _ _ _ _ _ _ p
5. A group of classes at university: c _ _ _ _ _ _
6. Numbers and facts about sales and stock: _ a _ _
7. A person who helps at work: _ _ _ i _ _ _ _ _

Task 4E: Work in groups of 3–4 students. Talk together and plan your "future engineer" path. Make a timeline. Start with study, then add important steps (like internship, first job, new skills, bigger job). Write one simple sentence for each step. Draw small pictures or add symbols to make it fun. Share your timeline with the class.



Real Life

Task 5A: Work in groups of 3 or 4 students. Go to a supermarket near your home or school. Look carefully at the supermarket like an engineer. Find 3 problems or weak points and 3 good points. Write one idea to improve each problem. Make a small presentation with photos, drawings, or notes. Share your ideas with the class and explain how your changes can help.

Vocabulary

Task 6A: Work in pairs. Imagine you and your friend both work in a supermarket. Tomorrow is a big sale day. You are texting each other to get ready. Write a short WhatsApp chat using at least 4 words from the list below:

- inventory - shelf- checkout - warehouse- supply chain- company


10:04 AM
5G
117
Online
Wed, 26 Nov
08:42 am
08:42 am
08:13 am
08:13 am

UNIT 5: FAST FOOD, SMART WORK

In this unit you will be able to:

- Understand what industrial engineers do in fast food restaurants.
- Explain how fast food systems are connected to industrial engineering.
- Analyze the main challenges industrial engineers face in fast food chains.
- Develop and propose solutions to real-life challenges in fast food systems

KEY CONCEPTS:

- Quality
- Efficiency
- Management
- Data Analysis

Warm Up

Task 1A: Answer the questions:

1. How often do you eat fast food?

a. Every week
b. Every month
c. Rarely
d. Never

2. What is most important to you at a fast food restaurant? Why? (Choose only one!)

- Taste
- Speed
- Price
- Friendly staff
- Clean place

Task 1B: Fill the tray with your favorite fast foods draw or write! In pairs discuss:

1. Why did you choose this food?
2. Which part of the food service is an industrial engineer responsible for?

Reading

Task 2A: Work in pairs. One student is the customer, and one is the worker. The customer says the order only once. (Maximum 5) The worker listens and writes it quickly. Use a timer. Check the order together. Then swap roles.

Menu

Burger (beef, chicken, veggie)

Fries (small, medium, large)

Salad (chicken, tuna, veggie)

Pizza (cheese, pepperoni, vegetable)

Nuggets (5 pieces, 10 pieces)

Wrap (chicken, veggie)

Sandwich (chicken, tuna, egg)

Soup (chicken, tomato)

Dessert (ice cream, cake, fruit)

Drink (cola, orange juice, water, milkshake)

Task 2B: Discuss in pairs:
How can engineers make ordering easier and faster?
What tools or ideas can help workers take orders better?

Industrial engineers help fast food restaurants work better and faster. They plan kitchen systems so workers can move easily and cook quickly. In a good kitchen system, machines, tools, and work tables are in a line. This makes it easy to prepare burgers, fries, salads, or sandwiches without walking too much. Workers can take the bread, add meat and vegetables step by step, and finish the food quickly. This system also helps make the same food every time, so customers always get the same taste and quality.

Engineers also study how long it takes to take orders, cook food, and give it to customers. They check every step carefully and try to make it faster. For example, some restaurants have two lines for cars. This way, more customers can order at the same time, and cars do not wait long. In some kitchens, workers look at big screens to see orders clearly. When workers see orders fast, they can start cooking right away. This saves time and makes service faster.

Engineers care about food quality too. They make sure the food tastes the same in every place. To do this, they use timers on grills and fryers, so food cooks for the same time every day. They also check machines every morning to make sure they work well. Engineers train workers to follow the same steps and rules, so every meal is fresh and safe.

Engineers help with customer flow inside the restaurant. Some places have self-order machines. People can choose their food on a screen, pay easily, and wait for their food. This helps workers focus on cooking and packing orders. In other places, customers can order food on an app before they arrive. When they come to the restaurant, their food is ready. This helps people get their food fast and leave happy.

Engineers also think about how to make customers happy, especially children. Some restaurants have special kids' menus with smaller food and toys. Children get a small gift, so they feel excited and want to come back again. This is another way engineers help restaurants get more customers and make people enjoy their visit.

Fast food restaurants need to be fast, cheap, and tasty. Industrial engineers make kitchens easy to use, help workers do their jobs better, and make customers happy. They save time and money for the restaurant. They also make sure customers get good food quickly and enjoy their experience.

Task 2C: Read the definitions. Find the words in the text. Write the words.

1. A place for cooking and preparing food. → _____
2. A thing like a grill or fryer. → _____
3. A thing to see orders or pictures. → _____

4. A program on a phone to order food. → _____
5. The opposite of slow. → _____
6. The feeling when people enjoy something. → _____
7. A small gift for children in meals. → _____

Task 2D: Read each question. Choose Yes or No.

Do engineers want workers to walk a lot in the kitchen? Yes / No

Do engineers plan kitchens to be slow and difficult? Yes / No

Do engineers try to make food the same in every restaurant? Yes / No

Do engineers check machines only one time a year? Yes / No

Do engineers use screens to help workers see orders fast? Yes / No

Do engineers help customers move easily inside the restaurant? Yes / No

Do apps help customers get food faster? Yes / No

Do engineers make special menus for children in some restaurants? Yes / No

Task 2E: Work in small groups. Choose one problem from the list below. Discuss the problem together. Think like an industrial engineer. Write your solution on paper. Present your solution to the class.

- There is a long line of customers waiting inside.
- The food is sometimes cold when customers get it.
- Workers walk too much in the kitchen and feel tired.
- Some customers get the wrong order.
- Children feel bored and don't want to come back.
- Many cars wait too long in the drive-thru line.
- Workers cannot see the orders clearly.
- Customers wait too long for their food after ordering on the app.

Listening

Task 3A: In pairs, look at the pictures and in pairs discuss the questions:

1. Ordering at the counter
2. Drive-thru
3. Self-order machine

1. Which one is the easiest to use? Why?
2. Which one is the fastest for customers?
3. Which one helps workers the most?
4. Which one do you usually use? Why?
5. If you are an engineer, which one would you improve? How?

Task 3B: Listen to the podcast. When you hear a word from the list put a tick next to the word you heard.

Engineer	Customer	Burger	Fast	Elevator	Department
App	Review	Timer	Toy	Manager	Juice
Salad	Factory	Layout	Order	Complaint	Floor

Task 3C: Listen to the podcast again. Decide if each sentence is True or False, based on what the podcast suggests

- Customers usually move slowly inside a fast food restaurant. (____)
- Using apps or machines to order can make the process easier for customers. (____)

- Long lines are good for business because they give people more time to choose food. (____)
- If there are more workers at busy times, service becomes faster. (____)
- It doesn't matter where customers collect their food, as long as they pay.(____)
- The way a restaurant is designed can change how people move and feel inside.(____)
- Engineers don't need to think about customers — they only focus on machines.(____)
- Making customers happy is one of the reasons engineers do their job. (____)
- Engineers never talk to staff while solving problems. (____)
- People often forget that engineers help make their fast food experience better. (____)

Task 3D: Match the part of the restaurant with what industrial engineers do for that part.
Write the correct letter (A–D). One is extra.

Place in the Restaurant

1. Ordering Area _____
2. Pick-up Area _____
3. Queue Line _____
4. Store Layout _____

What Engineers Plan:

A. Doors, signs, and counters
B. A clear and simple place to collect food
C. Number of workers and where people stand in line
D. Apps and screens that are easy to use
E. Where the chef puts ingredients

Task 3E: Match each word on the left with the correct phrase on the right. One phrase is extra

Words	**Phrases**
1. App	A. where you stand to make an order
2. Counter	B. uses data to solve problems

3. Queue management	C. a popular fast food item
4. Touchscreen	D. lets you order food on your phone
5. Pickup and delivery	E. used to order food without talking to a worker
6. Layout	F. helps you pick up your food at home or in the car
7. Engineer	G. helps customers move easily in the restaurant
	H. planning the number of workers and where lines form

Task 3F: In groups of 3–4, explain why engineers are important in fast food in 1 minute total.

Rules:

- Each member gives one unique idea, no repeats!
- If someone repeats, your group must start over or change the idea.
- First, take 2 minutes to prepare your own key sentence.
- As each member speaks, others write their name and keywords in the scheme.
- You have 3 minutes total to complete all speeches.
- Then, share your group's completed scheme with the class.

Reading

Task 4A: Think about your own thoughts and feelings. Read each question and choose your answer.
Task 4B: After reading the text, check again. Discuss in pairs:

- Did you change any of your answers? Why or why not?

- Do you feel more confident now?

Questions	Yes	No	Sometimes	I don't know
1. I feel nervous about working in a fast and busy place.				
2. I worry about making mistakes in a new job.				
3. I feel ready to talk to many different people at work.				

Dear Diary,

Today was a very good day. I had a meeting with an engineer and honestly, I think I really needed it. I've been reading about fast food engineering jobs, and honestly... I'm not sure if I'm good enough for it. It sounds really difficult. Fast food is really fast in every way and that made me nervous.

He asked me what makes me feel worried the most. I said I think... everything. The pressure. Working fast when it's busy. What if I make a mistake? Or can't work fast enough?

He told me I'm not the only one who feels that way. One big problem in this job is the high pressure. During lunch or dinner time, even a small problem like a broken fryer can slow everything down. But that's why industrial engineers are important. He said they learn how to stay calm and fix problems quickly.

That still feels like a lot. I told him I feel better when I have time to think and plan. He said that's okay, and that my planning skills will help a lot. The job is to make systems work well before problems happen. And with experience, I'll learn how to stay calm when things go wrong. I hope that's true.

I asked him, "What if no one listens to my ideas?" Like if I want to change the kitchen but people say no? He said yes, that happens. Some people don't like change. They want to do things the old way.

But as engineers, we also have to explain why our ideas are better. He said he learned to listen to people, explain things in a simple way, and work with the team. This helps them say yes.

I also told him I know I have to study data, but I'm not confident yet. He said that's normal. Fast food places have a lot of data — about sales, waiting times, machines, and customers. At first, it feels like too much. But I don't need to know everything on the first day. Start with small things. Try to see simple patterns. Use Excel or basic tools. He said I'll get better with time.

And then I said I also worry I can't follow all the new technology. It changes so fast. He agreed. Fast food companies use new things like AI, apps, and self-order machines. It's hard to follow sometimes. But he said I don't need to be a tech expert. Just stay curious. Visit restaurants. Ask questions. Read tech news. If I'm curious, I'll learn a lot.

Before the meeting ended, I told him I'm a bit shy. I asked how he works with so many different teams. He told me I don't need to talk a lot. I just need to listen and speak clearly. I'll work with cooks, managers, and others. They don't always understand engineering words, so my job is to explain in a simple way. He said I'll get better at this with time.

Honestly... it still sounds hard. But now I see that the problems are not impossible, just different than I thought.

He said exactly. The work is not easy, but it's important. You help real people, fix real systems, and make things better for everyone. And the best part? I won't be alone. I'll learn and grow.

I said thanks. This really helped. I needed to hear the truth, not just the fun parts. He said he was happy he could help. The problems are real but I can do it.

And maybe... I believe him.

Task 4C: Answer the questions below in 1–3 words.

1. Who does the student talk to?

   _____

2. What kind of job is the student worried about?

   _____

3. What is one big problem in fast food work?

   _____

4. What tool does the engineer suggest for data?

   _____

5. What do some people say “no” to?

_____

Task 4D: Read the sentences about the diary entry. Write the numbers 1–8 to show the correct order of what happened. The first one is done for you.

___ The student asks what to do if people don’t like her ideas.
___ The student talks about her fear of learning data and using new technology.
___ The engineer says planning helps stop problems before they happen.

1- The student meets with an engineer and says she’s nervous about fast food jobs.
___ The engineer gives simple advice: start small, stay curious, and talk to others.
___ The student says she feels better when she can think and plan.
___ The engineer says some people don’t like change and gives advice about explaining ideas clearly.
___ The engineer explains that even small problems, like a broken fryer, can slow everything down

Task 4D: Read the statements below. Tick the ones that are true based on the diary entry. Then, underline the part of the diary that supports your answer.

☐ She already works as a fast food engineer.
☐ She has been reading about engineering in fast food.
☐ She feels unsure about her ability to do the job.
☐ She wants people to listen to her ideas at work.
☐ She believes she’s good at managing pressure during busy times.
☐ She is worried about using data and new technology.
☐ She feels better when she can plan things ahead of time.
☐ She is confident when talking to big teams.
☐ She feels more hopeful after the meeting.
☐ She was expecting the engineer to only talk about the fun parts of the job.

Task 4E: Discuss in pairs and write your answers.

Why do you think the student wrote this diary entry?
→ _____

What is one thing the student learned about herself after the meeting?
→ _____

What does this diary entry tell you about being an engineer?
→ _____

Task 4F: Work in pairs. Take turns as the *student* and the *engineer*. Pick a problem card.The *student* reads the card and asks for help. The *engineer* gives kind and simple advice.Then, change roles and try a new card. Try to solve 3–4 problems.

Real Life

Task 5A: You are an industrial engineer working in a fast food restaurant. Your manager gives you this sales report. As a group, read the chart carefully.
Find at least 3 problems using the customer comments and data. Suggest 3 clear and realistic solutions based on what you see in the chart. Think about:

-Making food faster
-Changing prices
-Improving the taste or quality
-Making people want to buy more

Present your ideas to the class as a team:
-What are the problems?
-What are your 3 solutions?
-How can the company check if your ideas work next week?

Item	Sales (This Week)	Price	Avg. Waiting Time	Customer Comments
Burger A	210	115 TL	2 minutes	"Tastes great!" "Ready quickly."
Burger B	70	135 TL	7 minutes	"Too slow." "A bit dry."
Chicken Wrap	55	125 TL	5 minutes	"Healthy option, but too cold."
Fries	190	100 TL	3 minutes	"Always hot and crispy." "Perfect side dish."
Vegan Bowl	30	160 TL	9 minutes	"Good idea, but not tasty." "Too expensive."

Vocabulary

Task 6A: Match each word to the correct emoji clue. Then discuss in pairs:

1. Why do the emojis represent that word?
2. What does the word remind you of in a restaurant?

Emoji Clue	Word
🔁↔️	Pressure
🧍➡️🧍➡️🧍	Layout
🏅✨🍔	Pattern
😨⏰🔥	Opposite
🔵🔴🔵🔴	Quality
📐📐🧱	Flow

UNIT 6: SAFETY, CLEANLINESS, AND COMFORT

In this unit, you will be able to:

- Describe what industrial engineers do for ensuring safety, cleanliness and comfort
- Explain basic safety signs and their functions.
- Analyze the clean systems and what they do.
- Develop and propose solutions to real-life challenges in hospitals and office environments.

KEY CONCEPTS:

- Workplace Safety
- Hospital Design
- Comfortable Systems
- Clean Systems

Warm Up

Task 1A: Before watching, discuss the questions in pairs:

1. What do you expect to see in a tech office?
2. What comforts or safety tools might they have?

Exclusive Look Inside Facebook's Engineering Office In London

Task 1B: While watching the video, tick the comfort-related features you see:

☐ Sleep pods

☐ Mail system
☐ Free food
☐ Games room
☐ Quiet work areas
☐ VR room
☐ Warm lighting
☐ Art and creativity spaces
☐ Open staircases
☐ Pet-friendly areas
☐ Free drinks and snacks
☐ Soft chairs and plants

☐ Flexible tables

Task 1C: After watching, discuss in pairs:

- Which 3 items do you want in your future workplace? Why?
    1. _____
    2. _____

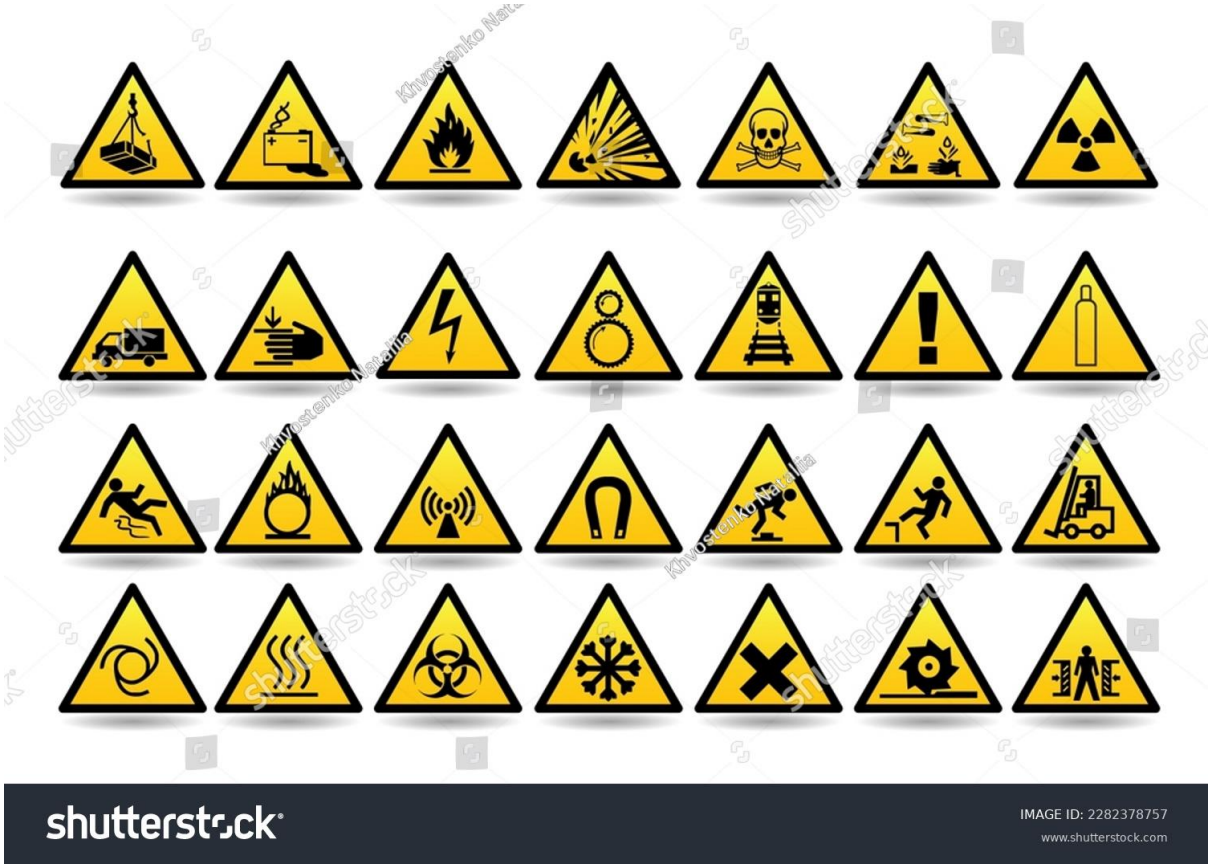
3. _____

- Are there any items that don't seem necessary to you?

Reading

Task 2A: Look at the safety signs in the picture. Work with a partner. Choose the signs you think you know. Discuss the questions below. Then check your guesses from the internet.

- What do you think they mean?
- Where can we see them?
- Why are they important?



Workplace Safety Report – March 2025

The Workplace Safety Team worked actively in March to make the factory safer. The team includes industrial engineers who focus on health and safety. They visited different departments and checked the working areas. They looked for problems that could cause accidents or injuries. They talked to workers, observed the daily tasks, and collected useful information. After this, they planned changes that could help workers stay safe and healthy.

The team placed 25 new safety signs around the factory. These signs now stand near machines, storage areas, and walking paths. The signs give clear warnings and directions. They help workers find the correct way to move inside the building and avoid dangerous places. Many workers said the signs helped them notice safety problems more easily.

The engineers also changed the layout of some departments. They moved large machines, boxes, and storage racks. Now workers can walk more easily from one place to another. They can carry materials without hitting objects or slipping on the floor. The team also cleaned the paths and removed objects that blocked movement.

In the packaging and cutting areas, workers started using ergonomic tools. These tools support the hands, wrists, and back. They reduce physical pain and make daily tasks more comfortable. Several workers said they feel less tired after long hours of work.

The team also prepared a short safety training. They invited workers to join this program in small groups. A total of 86 workers completed the training in March. The training focused on how to fix or clean machines in a safe way. Workers learned how to use the lockout-tagout system. This system helps workers turn off machines completely before they start repair or cleaning. It prevents electric shock and moving parts from causing injuries.

At the end of March, the team looked at the number of accidents. They saw a 40 percent drop compared to February. Most of the small accidents, like cuts, falls, or back pain, became less common. The team feels happy about this result. They will continue to visit all areas of the factory and speak with workers. They plan to add more changes next month.

All workers should follow safety rules during every task. They should wear the correct safety gear, check their tools before use, and move carefully in shared areas. Workers can also report unsafe situations to the Workplace Safety Team at any time. Everyone plays an important role in creating a safe and healthy factory.

Task 2B: Read the text. Look at the list of topics below. Did the report talk about these things? Tick the topics that were in the report**.**

Topic	✓ / ✗
Tools that help workers feel less tired	
A plan to build a new part of the factory	
A lesson to teach workers how to stay safe at work	
The cost of electricity in the factory	
Signs that show workers where to go and what to avoid	
Moving heavy things to make it easier to walk in the factory	

Task 2C: Read the list of actions below. Then match each action to the correct group:
A. Industrial Engineers
B. Workers
C. Workplace Safety Team

Actions	**Who Did It?**
1. Visited different departments and checked the working areas	
2. Placed new safety signs around machines and walking paths	
3. Used new ergonomic tools to feel less tired	
4. Joined a short safety training program	
5. Prepared the safety training program	
6. Collected information and planned safety improvements	
7. Moved machines and boxes to open walking areas	
8. Reported that they feel less tired after using new tools	

Task 2D: Work with a partner. Read each situation. Something unsafe happened. Talk together and decide what the person or the team forgot to do. Then write a short answer using simple words.

1. Ali fell while carrying a box through a busy area with many machines.

   _____

2. Merve got a small electric shock while working on a machine.

   _____

3. A worker walked too close to a cutting machine and got scared. He didn't know it was dangerous.

   _____

4. Two workers had back and wrist pain after working all day on the same task.

   _____

5. A new worker didn't know how to fix a machine safely. He didn't follow the right steps.

   _____

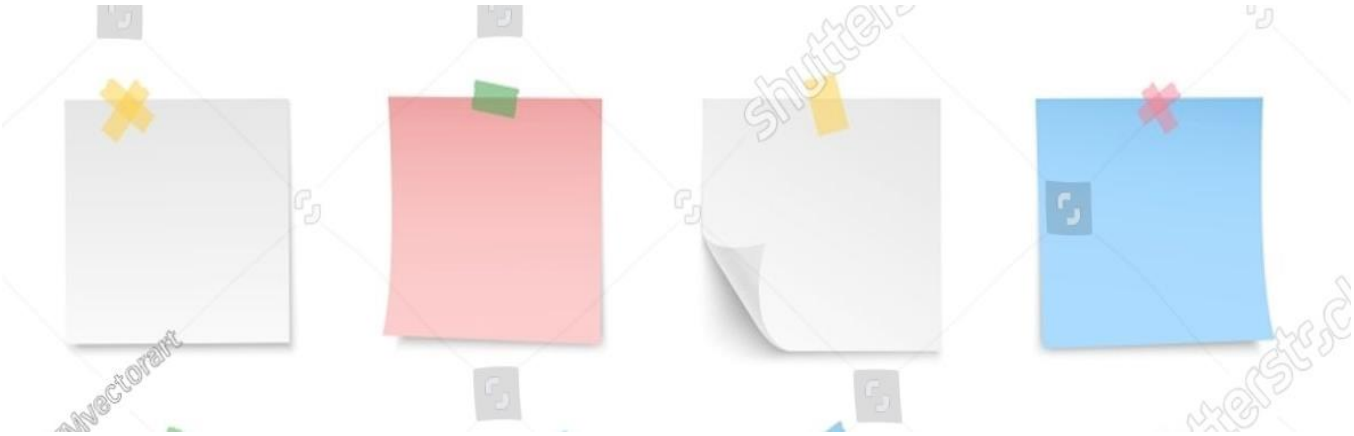
6. A worker used a tool that didn't feel safe. It was old and hard to hold.

   _____

7. Someone saw a cable on the floor that looked dangerous. He said nothing. Later, another worker tripped.

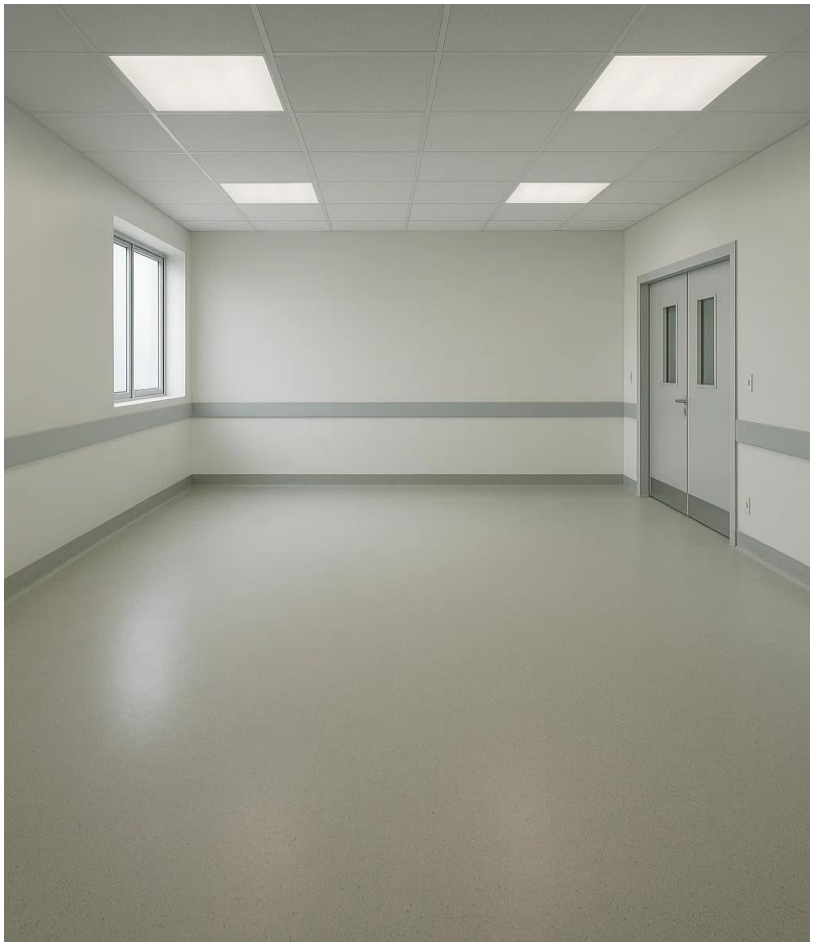
   _____

Task 2E: Work in pairs. Imagine a new worker is starting in your factory. Then, write 4 more short advice sentences to help the new worker stay safe.

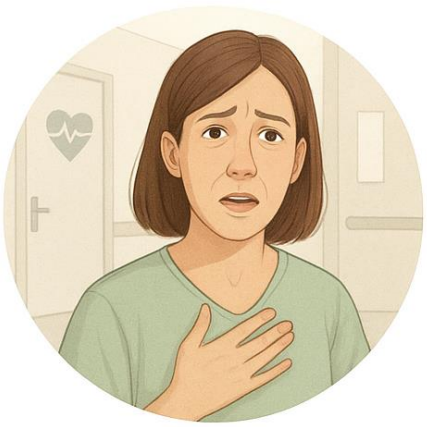


Listening

Task 3A: Work in pairs. You are hospital designers. Use the blank room and design it using these categories: Comfort, Cleanliness, Technology, and Safety. Add your ideas to the chart with reasons.



Comfort	Cleanliness	Technology	Safety




SCRIPT:

Hello dear listeners! Welcome to our hospital's new feedback project. We asked some of our patients to share how they felt after the recent changes. These changes were made by industrial engineers to make the hospital safer, cleaner, and more comfortable. Let's hear what our patients have to say…"

" Hello, I am Selena. Before the changes, this hospital was very confusing. I remember one night, I had chest pain, and the nurses had trouble moving me to the emergency room quickly. The hallways were long and full of equipment. But now, everything is faster. The emergency room is close to the heart unit. My doctor said this helps save time. Even my family found the new waiting areas more organized. I felt safer this time."

Hi! I am Daisy. When I gave birth here 5 years ago, I got a small infection. I didn't blame the hospital, but the room was warm and didn't feel fresh. This time, after my surgery, it was very different. The air was cool and clean. The nurse said they use special filters now. I also saw new machines that clean the rooms automatically. And the bathrooms? So much cleaner than before. I think the engineers thought about every small detail.

Hello! My name is Joseph. I can tell that last year the beds were old and hard to move. I have back problems, so even sitting up was painful. Now, the new bed adjusts with a small control. It helped me sleep and even eat better. The nurse told me they also got 5 new tools that are lighter and easier

to carry. I saw it! They didn't look tired or stressed. And the chairs in the visitor's room? Finally soft and wide! These are small things, but they changed my stay.

I am Elijah. I used to wait a lot just to see the doctor, I waited one hour or more. And sometimes, my file was lost. Not anymore. The process is fast now. I arrived, gave my name, and they already had my file on the computer. I saw fewer paper forms and more digital tools. Also, I noticed the hospital is greener now. There are 4 tools—automatic lights, water-saving sinks, even machines that collect and separate medical waste. It feels modern and responsible. I'm proud to be treated here

Thank you to all our patients for sharing their voices. We will continue improving your hospital experience with the help of industrial engineers who care about safety, comfort, and clean systems. See you next time

Task 3B: Listen carefully to each patient. They mention numbers or times in their stories. Write the correct numbers in the blanks.

1. How many years ago did Daisy give birth?
   → _____ years ago

2. How long did Elijah wait before the changes?
   → _____ minutes

3. How many patients are speaking in the recording?
   → _____ patients

4. How many things did Elijah mention about the hospital being "greener"?
   → _____ things

Task 3C: Listen to the podcast again. Match the correct action with the speaker: Selena, Daisy, Joseph, or Elijah.

___ Explains how delays during an emergency could be dangerous

___ Suggests the room felt fresher and safer during their recent stay

___ Feels more independent now thanks to new equipment

___ Thinks the hospital is more modern and eco-friendly

___ Observes that technology has replaced some cleaning jobs

___ Thinks hospital workers are less physically tired now

___ Talks about digital systems helping prevent past mistakes

___ Believes guests and visitors have a better experience now

Task 3D: Work in pairs. One student is a patient from before the hospital changes. Say one problem you had. The other student gives a solution. Then change roles. You can use ideas from the listening or create yours.

Complaints

- The air was hot and stuffy.
- I waited too long for the doctor.
- The bathroom was dirty.
- My medical file got lost.
- The nurses looked very tired.
- The hallway was full of equipment.

Task 3E: Discuss in pairs: What was the most important change in the hospital, in your opinion? Why do you think it is important? Write your ideas.

Reading

Task 4A: Work in pairs. Look at the photo and discuss the questions below:

1. What do you think this object is?
2. Where do you think it is used?
3. Why might people use this kind of filter?

4. Do you know any other machines or places that need to be very clean?

The Daily Engineer

Today's Feature: Clean Systems Are Getting Smarter

We all know that hospitals, labs, and food factories must be clean. But today, industrial engineers are taking "clean" to a whole new level. Clean doesn't just mean "not dirty" anymore it means safe, smart, fast, and eco-friendly.

Let's start with cleanrooms. These are special rooms used in places like electronics factories and medicine labs, where even one tiny dust particle can be a big problem. In these rooms, the air is filtered again and again using HEPA filters. The pressure inside the room is carefully controlled so no

outside air can enter. Engineers also use special floors and walls that don't collect dust. These rooms must stay clean all the time even when people are working inside them!

In food companies, engineers use a system called Clean-in-Place (CIP). This means the machines can clean themselves while they are still working. Hot water or steam flows through the pipes and tanks. There's no need to stop the machine or take it apart. It saves time, water, and helps keep food safe from bacteria.

Hospitals are also getting safer. Engineers design smart waste systems that help workers throw away dangerous items like used needles, gloves, and medical waste. The bins are marked, sealed, and easy to use. This protects doctors, nurses, and cleaning staff from infections.

And it doesn't stop there. Many engineers now care deeply about the environment. They want clean systems that also help the Earth. That's why they create water recycling systems, and use low-energy machines that do more with less.

So, what does "clean" mean in 2025? It means safe for people, good for the planet, and built to last all thanks to engineering.

From the Design Desk – Comfortable Spaces Focus

Do you like cold air blowing on your head at work? Or bright lights in a hospital room when you're trying to rest? Most people don't. That's why industrial engineers are now working to make rooms feel better not just work better. They are focusing on comfort, and using science to make everyday spaces more relaxing, more human, and more helpful.

Let's start with hospitals. Engineers are improving air systems to make sure patients feel better during recovery. They use HVAC systems (heating, ventilation, and air conditioning) to keep the temperature just right. The air is not too dry or too humid. No more freezing in thin hospital blankets or waking up sweating. The air feels fresh and soft and that can help patients sleep better and heal faster. But engineers don't stop at air. They care about light and noise too. In a hospital in Izmir, engineers replaced bright white lights with warm, soft lighting. This made the rooms feel calmer. They also added sound-absorbing walls and ceilings, so patients are not disturbed by carts, footsteps, or machines at night.

In offices, engineers are redesigning how people work. They create open spaces with whiteboards and flexible tables for teamwork. But they also add quiet corners with soft chairs, plants, and low light for people who want to focus alone. Some companies now have "wellness rooms" small spaces where workers can rest, breathe, or even stretch during the day. All designed with comfort in mind. What makes this really special? Engineers don't guess. They ask real people what they need. This is called user-centered design. In a recent project, engineers asked nurses where they feel tired, and then designed a space with more sitting areas and better lighting near nurse stations.

Comfort is not only about soft chairs or nice colors. It helps people do their jobs better. It helps patients feel less stress. It improves focus, rest, and even mood. And behind all of it are the engineers who ask, listen, and design with care.

Task 4B: Answer each question with up to 4 words from the text.

1. Where are cleanrooms used?
   →_____
2. What happens to air pressure in cleanrooms?
   →_____
3. How do machines clean themselves in CIP systems?
   →_____
4. What materials help reduce noise in hospitals?
   →_____
5. How do engineers design comfort in offices?
   →_____

Task 4C: Match each engineering solution with its main function.

Solutions

a) HEPA filters
b) Clean-in-Place
c) Soft lighting
d) Wellness rooms
e) Smart waste bins

Functions

1. ___ Helps workers rest or relax during the day
2. ___ Removes dust and keeps air clean
3. ___ Makes hospital rooms calmer at night
4. ___ Cleans machines while still working
5. ___ Helps throw away dangerous hospital items safely

Task 4D: Work in pairs. Draw lines or match the items with where they happen.

Engineering Goal	Where?
☐ Air with no bacteria or dust	A. Hospitals
☐ A relaxing space with warm light	B. Food Factories
☐ A safe way to throw away used needles	C. All of them
☐ Machines that clean themselves	D. Cleanrooms
☐ A quiet place to focus or rest	E. Offices
☐ Using less water and energy	

Task 4E: Rank these goals from 1 (most important to YOU) to 5 (less important). Then talk to your partner.

- [ ] Keeping the air clean
- [ ] Helping people feel calm and safe
- [ ] Saving water and energy
- [ ] Designing quiet and peaceful rooms
- [ ] Making machines clean themselves

Task 4F: Take turns asking and answering these questions:

- *Which goal did you rank number 1? Why?*
- *Would your answers change if you worked in a hospital?*
- *Do you think comfort is more important or cleanliness?*
- *If you were an engineer, what would you design?*

Task 4G: Work in groups of 4. First, research what "user-centered design" means. Then, look at the office photo. Two students act as workers and explain problems; two students act as engineers and suggest solutions based on the reading and the workers' ideas. Switch roles and repeat with new problems and solutions.

Real Life

Task 5A: Work in groups. 4-5 teachers the questions below. Write down their answers. Find common problems and suggest 1–2 solutions. Choose one question and fill the pie chart according to the answers. Make a small poster or slide and present it.

Is the temperature in your office usually comfortable?

☐ Yes ☐ No ☐ Sometimes

Is there enough natural light or good lighting in your office?

☐ Yes ☐ No ☐ Sometimes

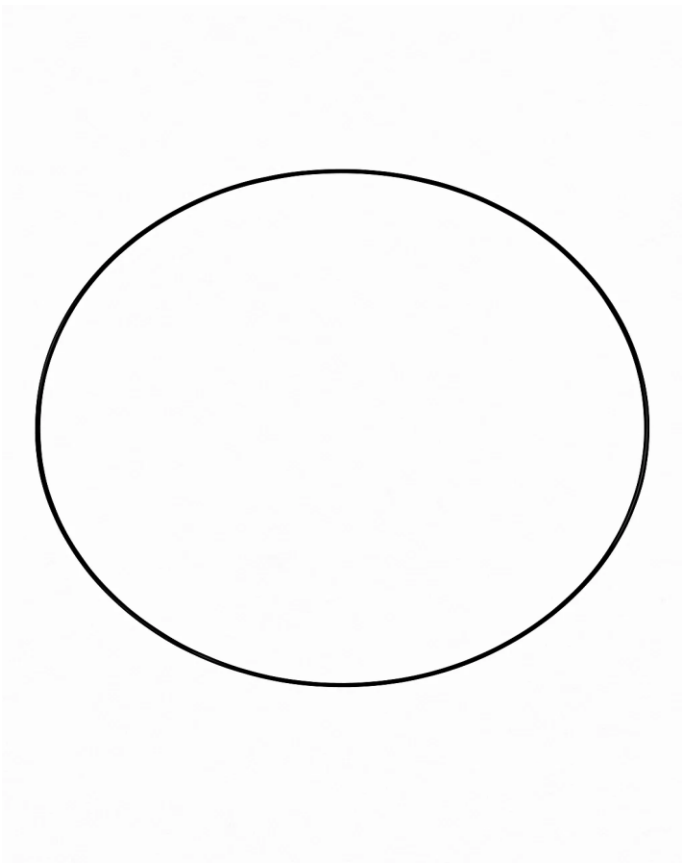
Do you have any noise problems in your office? (e.g., hallway noise, construction)

☐ Yes ☐ No ☐ Sometimes

What other problems have you encountered, and what are the good things about your office?

_____

_____



Vocabulary

Task 6A: Two sentences use the target word. One is correct and makes sense in real life. The other is possible in grammar, but not logical in meaning. Circle the correct one.

1. repair

a) He wants to repair the broken door before it rains.

b) She wants to repair the ice cream before eating it.

2. bin

a) I threw the bookshelf into the bin after reading

b) I threw the old papers into the bin near my desk

3. explosion

a) The loud explosion shook the windows.

b) The loud explosion cleaned the floor.

4. ceiling

a) We placed the coffee table on the ceiling.

b) We painted the ceiling white to match the walls.

5. remove

a) The dentist will remove the bad tooth next week.

b) The chef will remove the sunshine from the salad.

6. ventilation

a) The gardener checked the ventilation to water the plants.

b) The school checked the ventilation to improve the air.

7. flexible

a) The gymnast is very flexible and can touch her toes.

b) The book is flexible and can change color when it rains.