



**Amirkabir University  
of Technology**  
(Tehran Polytechnic)

## ENGLISH TURBO

DEPARTMENT OF FOREIGN LANGUAGES

# Chapter 1



# OUTLINE

- ❖ Introduction
- ❖ Reading skill
- ❖ Text and new vocabulary
- ❖ Grammar (noun clause)

# Introduction

- Read the introductory paragraph silently and answer 3 questions?
1. What is the definition of engineering according to the text? \_\_\_\_\_
  2. What are 3 important inborn features of human beings?
    - 1 They are \_\_\_\_\_.
    - 2 They are designers and \_\_\_\_\_.
    - 3 They need to live in a \_\_\_\_\_.
  3. In lines 7 & 8, what does this activity refer to?  
\_\_\_\_\_

**While meanings change, the concept of engineering derives from the dawn of human history as our ancestors developed and designed tools that were essential for their survival.**

**Topic sentence includes main idea**

**Main idea: All through history engineering has been defined as tool making.**

**A claim**



## **Two supporting ideas:**

**Indeed, human beings are defined by their tool-making, designing and engineering skills, and the socialization and communication that facilitated the invention, innovation and transfer of technology such as the axe, hammer, lever, wedge, pulley, wheel and so on.**



**1. Human beings are by nature tool makers.**

## **Two supporting ideas:**


**Although based on trial and error, this activity is similar to the modern idea of engineering where trial and error is still an important part of innovation.**



**2. Trial and error, which is the basis of making new tools, has not changed through history.**

# New words

<b>concept</b>	meaning, definition, idea
<b>derives from</b>	come from, originate
<b>dawn</b>	beginning, start
<b>ancestors</b>	fathers of fathers, great grandfathers
<b>essential</b>	basic, vital, fundamental, important
<b>survival</b>	continue living; stay alive
<b>socialization</b>	becoming a member of a society
<b>facilitate</b>	make easy
<b>Invention</b>	Make new things
<b>innovation</b>	Having new ideas, creativity
<b>transfer</b>	Sending; conveying
<b>trial</b>	testing

- **Titles and headings (subtitles)**
- **Headings act as the main ideas of different sections of a text**
- **Titles often state the general idea discussed in a text.**
- **How  Find the keywords.**
- **Do the example on page 2.**



Pre-reading



# A brief history of engineering

## Section 1: Paragraph 1

- Main idea:

The history of engineering is the same as the history of humanity. (a claim)

- Two supporting ideas:
  1. human beings are tool makers by nature.
  2. Tool making and designing explains many changes in the history.

# A brief history of engineering

## Section 1: Paragraph 2

- Main idea: The history of engineering as a profession

**Question 1:** Find the timeline (3 ages).

**Answer:** Ancient times, Middle ages (Renaissance),  
16<sup>th</sup> and 17<sup>th</sup> centuries (Age of Scientific  
Revolution)

# A brief history of engineering

## Section 1: Paragraph 2

- Main idea: The history of engineering as a profession

**Question 2:** What are some of the most important features of these ages?

- \* Ancient times: for military purposes and in a simple patriarchal form (from one generation to the next)
- \* Middle ages and 16 & 17<sup>th</sup> centuries: establishment of the first technical-vocational schools

# A brief history of engineering

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- **Section 1: paragraph 3**: two examples of the 2<sup>nd</sup> and 3<sup>rd</sup> ages

<b>interact</b>	Influence, affect on each other
<b>account for</b>	Explain, describe
<b>pace</b>	speed
<b>profession</b>	Job, career, vocation
<b>weapon</b>	A gun or sword; things used for fighting
<b>quest</b>	search
<b>infrastructure</b>	Basic structures and resources
<b>professionalization</b>	Becoming professional or expert
<b>Craft and guild</b>	Handmade things and a particular group who make them
<b>formalization</b>	Become or make formal; give credit to
<b>associated</b>	related
<b>patriarchal</b>	From father to son
<b>reveal</b>	Show, present
<b>approach</b>	Method, way, procedure
<b>landmark</b>	Turning point, an important time or sign



# Engineering and the Industrial Revolution

## Section 2: Paragraph 1

**Question :** When, where and what of Industrial Revolution?

## Section 2: Paragraphs 2 & 3

**Question 1:** How many phases are mentioned for Industrial Revolution?

**Question 2:** Time, duration and focus of each of these phases?

<b>Power (verb)</b>	force; give the power to; strengthen
<b>Take off</b>	Become successful; grow; develop
<b>synergistic</b>	Cooperative; having a positive effect on each other
<b>Take place</b>	Happen; occur
<b>onward</b>	after that
<b>Mass production</b>	production in great numbers
<b>telecommunications</b>	Communication over long distances
<b>boom</b>	growth; period of economic growth
<b>Post-war</b>	after the war
<b>surge</b>	Wave; sudden increase or shock
<b>alternating</b>	Changing frequently
<b>application</b>	using
<b>sustainable</b>	Permanent; continuous
<b>Green</b>	Environmentally friendly

# Education in engineering

## Section 3: Paragraph 1

**Question 1:** What were the oldest fields of engineering study taught at university?

**Question 2:** Name 3 pioneering countries in teaching engineering at university level.

## Section 3: Paragraph 2

**Question :** Why is France discussed among those 3 countries? (Why is France important in engineering education?)

**Section 3: Paragraph 3:** engineering education in 20<sup>th</sup> century

**Question:** what are some important features ?

<b>crucial</b>	Vital; important; essential
<b>creation</b>	making
<b>found</b>	establish
<b>retain</b>	Keep; preserve
<b>character</b>	Feature; identity
<b>accreditation</b>	Give credit to
<b>Qualification</b>	A good , positive feature
<b>flow</b>	current

# Future of engineering

## Section 4: Paragraphs 1 & 2

**Question 1:** What are the two problems of Humboldtian model of engineering education?

**Question 2:** Name the suggested replacements instead of Humboldtian model?

## Section 4: Paragraph 3:

**Question:** Name some of the goals of engineering in 21<sup>st</sup> century.



<b>ironically</b>	Sarcastically; in a joking way
<b>contemporary</b>	At the present time; now
<b>regard</b>	consider
<b>abstract</b>	Not concrete; imagined or mental
<b>underpin</b>	Support; be the basis of
<b>notion</b>	idea
<b>disinterested</b>	Have no interest in
<b>Pure &amp; applied knowledge</b>	Theoretical and practical knowledge
<b>Lead to</b>	Result in; cause
<b>diffusion</b>	spread
<b>overcome</b>	win
<b>underlying</b>	basic
<b>Position (v)</b>	Place; put
<b>Address (v)</b>	Deal with; consider; pay attention to
<b>mitigation</b>	Decrease; decline; reduce the bad effects of
<b>adaptation</b>	adjustment
<b>distribution</b>	spreading

# Grammar Section

- Noun clause
- What is a clause?

# A clause

- ✓ is a sentence (dependent or independent):
- ✓ He left.
- ✓ After he visited his brother,
- ✓ If I had a lot of money,
- ✓ He left after he visited his brother.

# Noun clause

- **A clause which function as a noun**
- **Subject, object (direct, indirect, proposition), predicate nominative**

# Subject position

- This is a lie.
- What he said is a lie.
- That Einstein was a genius is a fact.
- Whatever you say can be used against you.



# Direct object

- I know that he is a teacher.
- I understood what the lecturer explained.
- Everyone agrees that we have to act quickly.
- It's easy to forget that she's just a child.
- Recent research proves that global warming is already a reality.
- think (that), believe (that), imagine (that), guess, consider

# Direct and indirect objects

- direct (what, whom)
- indirect (to whom, for whom, to what)
- I gave the book to her.
- I gave what I bought to her.
- I gave what I bought to whoever came from the door.
- For an indirect object to exist, there must be a direct object
- Double object verbs (ditransitives) in English: give, buy, write, cook, bring, tell, pass, sell

# Object of proposition

- Listen to what he says.
- He tried his best for whomever was his friend.
- I believed in what he said (whatever he said).

# Predicate nominative

- A predicate nominative (also called a predicate noun) is a noun, noun phrase or pronoun that complete a linking verb and renames the subject.
- He is a teacher.
- The topic of this book is how hydraulic generators work.