

On Technology

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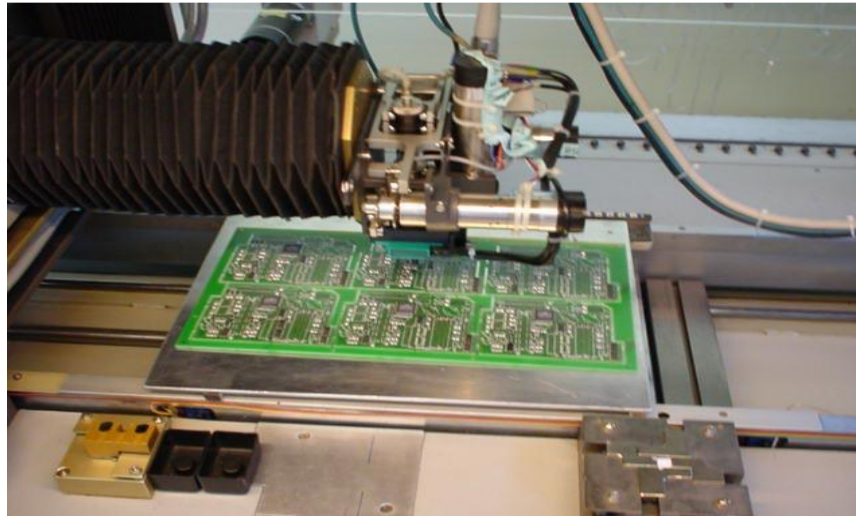
What is technology?

It is the way how a certain product or service is produced.

Each technology has its own logic.

Examples for Technology

- Production of Printed Circuit Board (PCB)



- Board must be manufactured first.
- Parts are fixed (mounted) on a plane.
- Short route of the head is required.

Examples for Technology (cont.)

- - metallurgy, i.e. producing metals as raw material,
- - molding (e.g. bronze sculptures),
-



Molding 2



Examples for Technology (cont.)

- Rolling

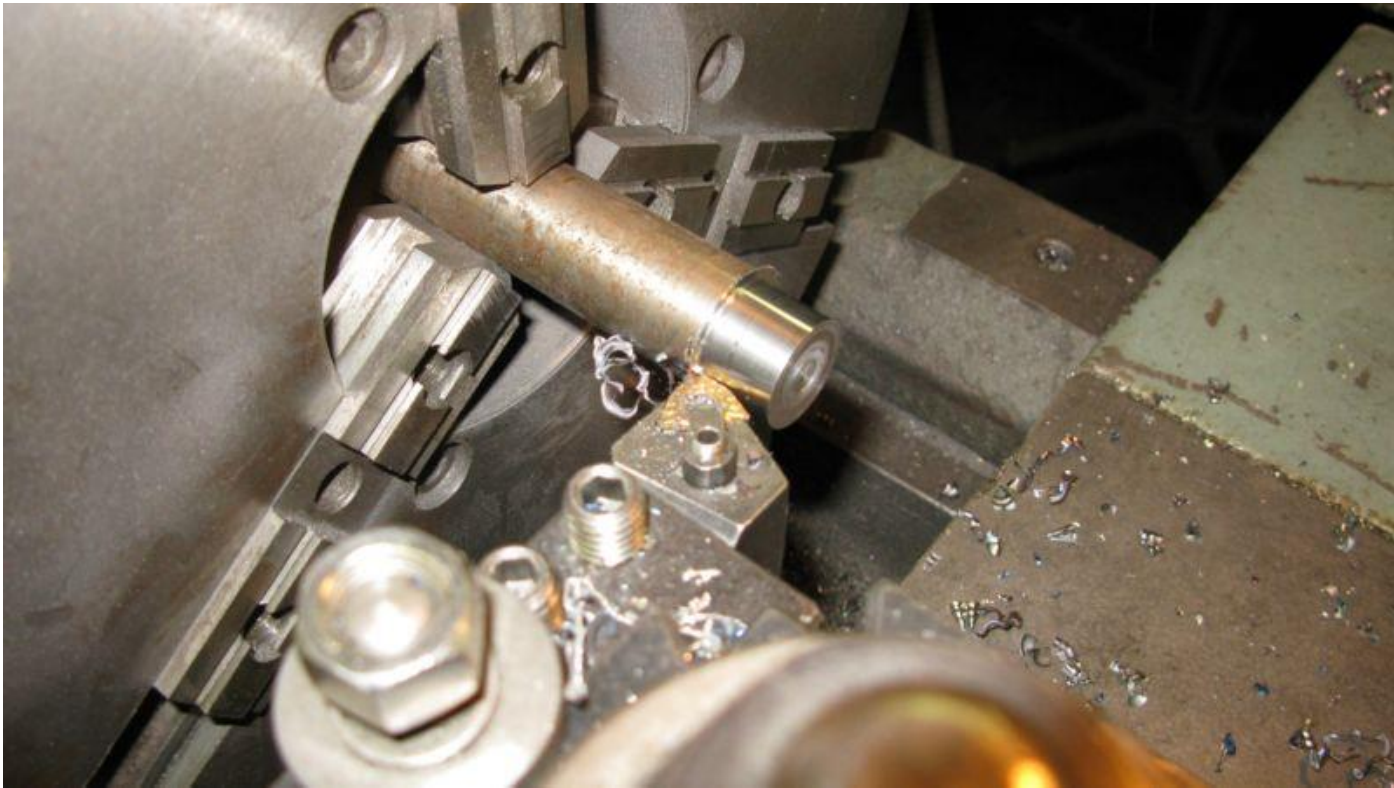


Rolling 2

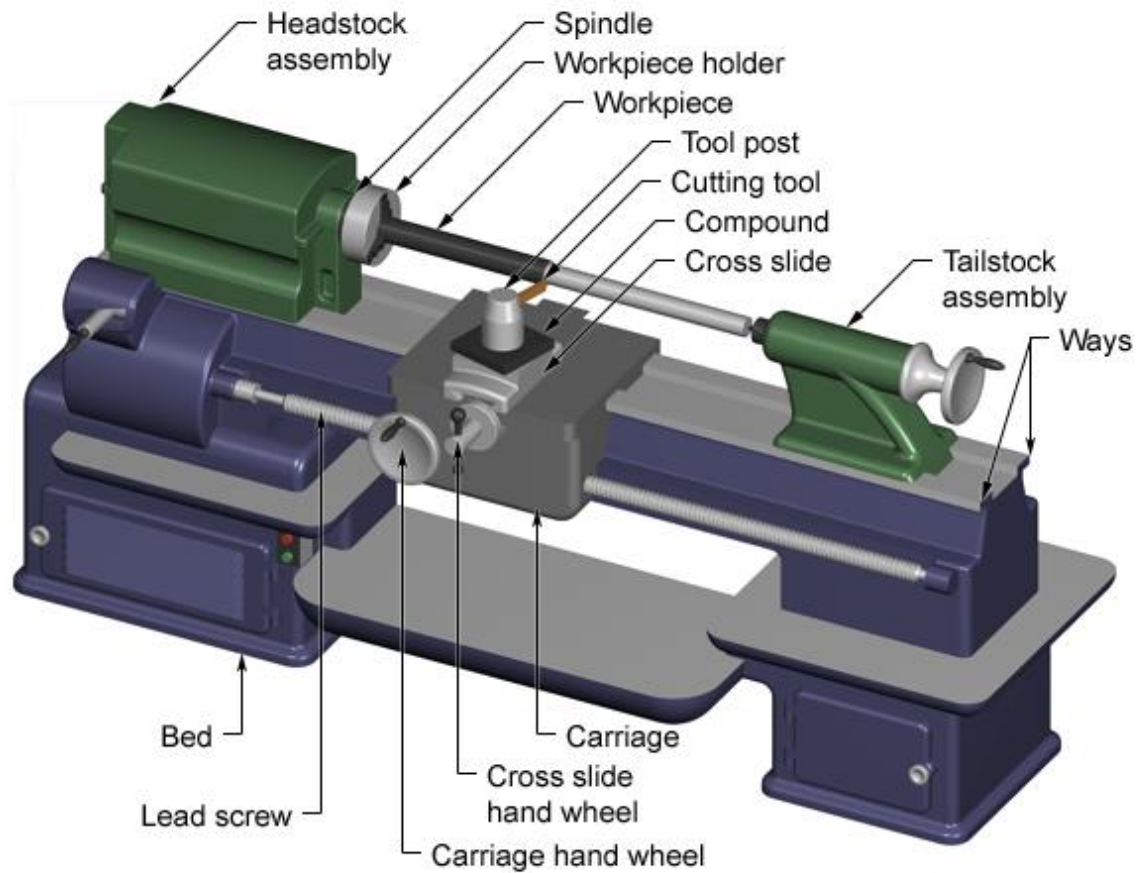


Lathing 1

- - lathing (turnery)



Lathing 2



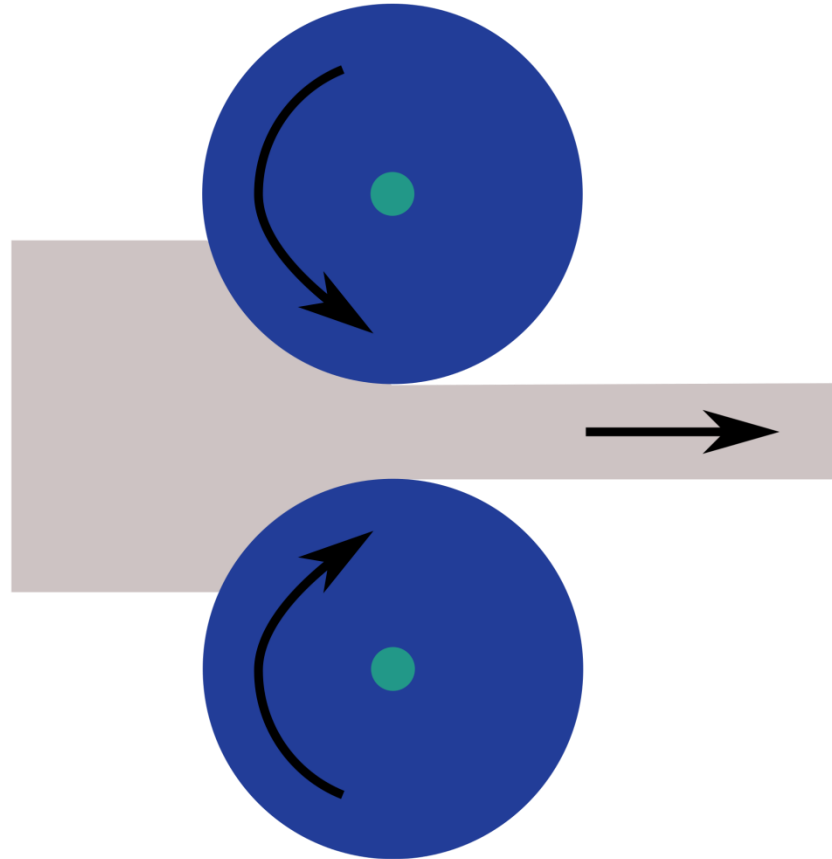
Miller



Examples for Technology (cont.)

- - metallurgy, i.e. producing metals as raw material,
 - - molding (e.g. bronze sculptures),
 - - lathing (turnery), miller, drilling (mechanical engineering),
 - - heat treating of metals,
 - - agricultural technologies:
 - - wheat production,
 - - tomato production:
 - - on arable land,
 - - in green house with soil,
 - - in green house without soil,
 - - irrigation,
 - - information technologies (computer and information engineering).

COLD ROLLING



Heat Treating

- Cristal structure changes at 728 C⁰.
- The closer the better.
- No oxygen allowed.
- Long time of cooling down.

Irrigation Technology 1



Irrigation Technology 2



Irrigation Technology 3



Assembly Line 1

- Mass production.



Assembly line 2



Examples for Technology (cont.)

- Construction industry:
 - There is precedence relation among operations.
 - Concrete can take arbitrary format. The format must be a priori prepared.
 - Water, electric energy, fresh air, gas, etc. Must be provided.

Some Contemporary Technologies



[Transparent VW factory](#)

Technology and Industrial Engineering

- The only branch of engineering which has no own technology is industrial engineering.
- An industrial engineer must be able to understand all kinds of technologies.
- Our job is to organize the processes well/in an optimal way.

Production of a Very Simple Product

- Here is the product:



Technological Instructions for Omelet Making

CHAPTER 1: DESCRIPTION OF THE TECHNOLOGY

Tools

**Small
bowl/cup
for
breaking
the eggs**

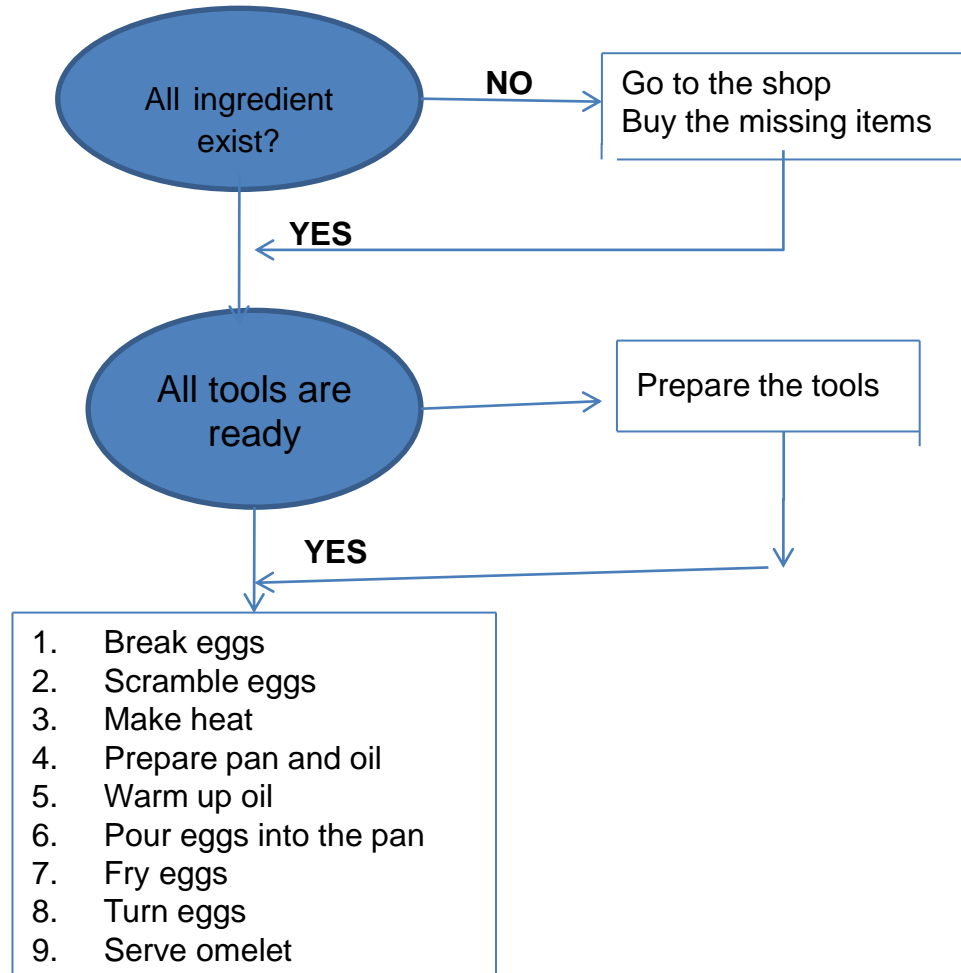
Pan



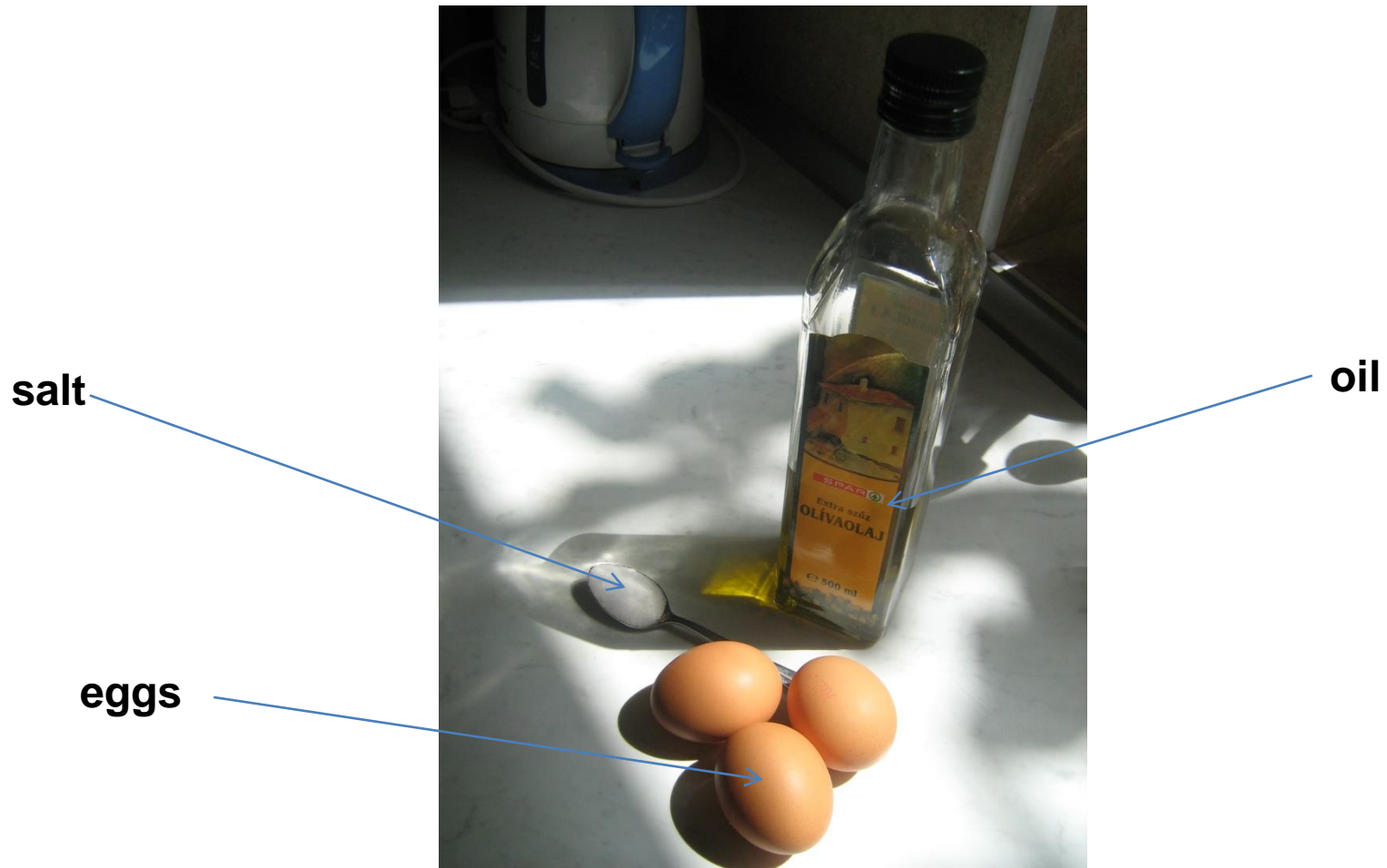
**Fork for
scrambling**

**Big bowl
for
scrambling**

**Wooden
tool for
turning**

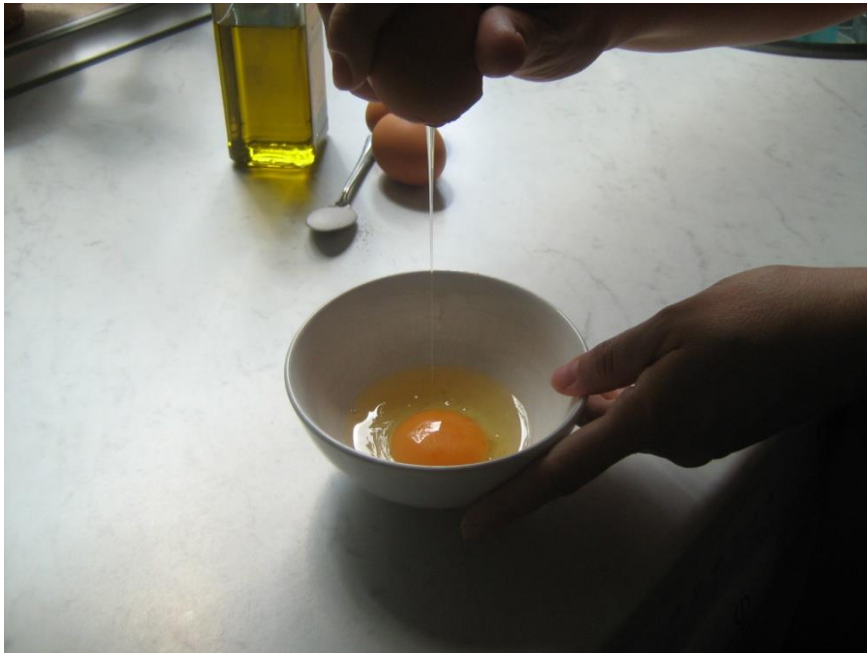


Raw Materials



Basic Processes of Technology

- No. 1: Breaking the eggs.



Basic Processes of Technology

- No 2: Adding salt



Basic Processes of Technology

- No 3: Scrambling the eggs



Basic Processes of Technology

- No 4. Making heat



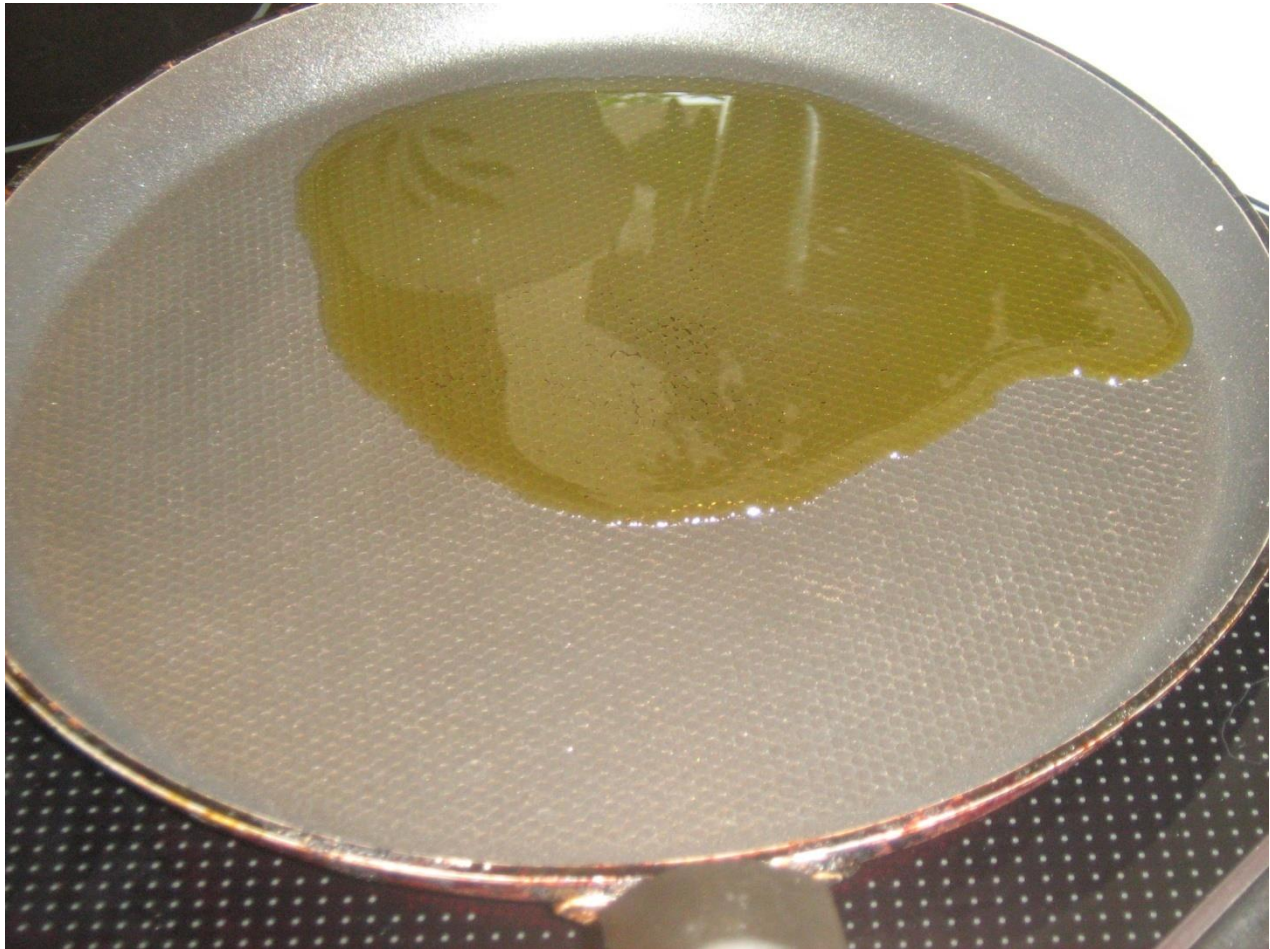
Basic Processes of Technology

- No 5: Prepare pan and oil



Basic Processes of Technology

- No 6: Heating oil



Basic Processes of Technology

- No 7: Pouring scrambled eggs into the pan



Basic Processes of Technology

- No. 8: Frying the eggs



Basic Processes of Technology

- No. 9: Turning the eggs



Basic Processes of Technology

- No. 10: Serve the eggs



Basic Processes of Technology

- No. 11: Make the customer to be satisfied.



Technological Instructions for Omelet Making

CHAPTER 2: INSTRUCTION FOR PERSONNEL

Necessary Education

- Either adult status ,
- or teenager educated well in cookery.

Health Requirements

- Do not suffer in any infectious diseases.

Technological Instructions for Omelet Making

CHAPTER 3: INSTRUCTION FOR OPERATIONS

- No.1: Use separate bowl for breaking and collecting the eggs.
- No. 2: Sea salt is preferred.
- No 5: Olive oil is preferred.
- No. 8: Don't mix the egg in the pan.
- No. 9: The egg may not stick to the pan before turning.
- No. 10: Keep the circuit format of the omelet when is served.

Technological Instructions for Omelet Making

CHAPTER 4: SAFETY REGULATIONS

Prevention of Accidents

- Don't use wet pan! The oil will squirt.



Prevention of Accidents

- Use gloves when your hand is close to heat.



Prevention of Accidents

- The wrong way of holding a matchstick.



Prevention of Accidents

- The correct way of holding a matchstick



Prevention of Damage

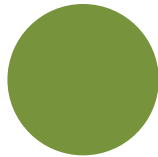
- Keep small children away.



Operation process chart



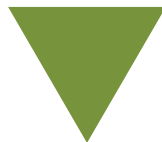
Inspection



Operation



Transportation



Storage



Delay or Temporary Storage

Conclusions

- Many different technologies
- No industrial engineering technology
- Decision points
- Technological Instruction

Thank you for your attention!