

Al-Mustaqbal University

Department/ Optical techniques



جامعة المستقبل
كلية التقنيات الصحية والطبية
قسم التقنيات البصرية

Medical glasses 2

4th stage

By

PhD. Candidate.

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2024/09/28

Lecture 1

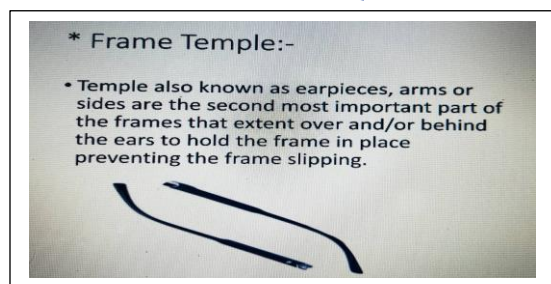
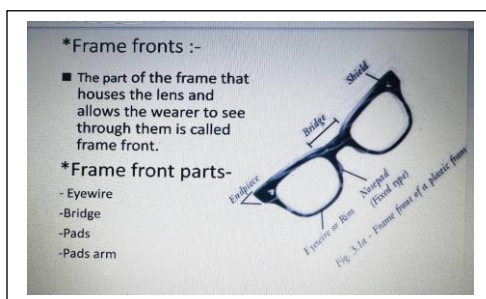
Spectacle, parts of the spectacle (Double bridge)

Spectacles (eyeglasses): are a type of eyewear that is designed to provide vision correction. Glasses for vision correction, or optical glasses, will have a prescription or power over the lens to help correct refractive errors such as myopia or hyperopia.

- Spectacles can also be non-prescription, meaning they do not correct vision and have no prescription, but can be used to protect the eyes if a coating or filter is applied to the lens, such as a tint for sun and UV protection.
- Spectacles may have lenses made from glass or plastic. Glasses can be made from various materials including acetate, titanium and other metals. Glasses come in a range of shapes, sizes and colours.

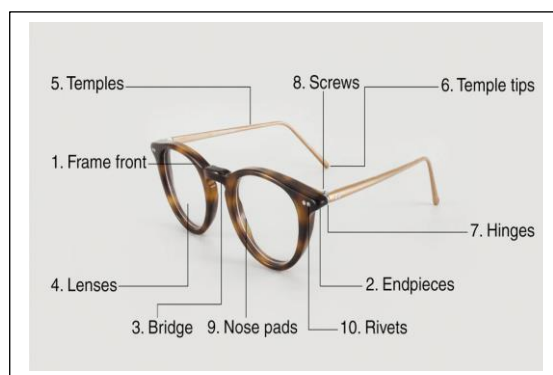
Parts of the spectacles:

Frame Frontal	Frame Temple
<ol style="list-style-type: none"> 1. Eye wire 2. Bridge 3. Pads 4. Pads arms 	<ol style="list-style-type: none"> 1. Luge 2. Joint 3. Spring 4. Screws 5. Temple tips



Parts of the spectacles include:

- ❖ **Lenses:** Lenses refer to the glass or plastic that sits in a glasses frame, in front of the eye, providing vision correction and eye protection.
- ❖ **Frame:** The frame refers to the structure of a pair of glasses that go around the lenses and include the arms, temples and nose bridge.
- ❖ **Bridge:** The bridge or nose bridge of a pair of glasses refers to the part of the frame that sits on the nose and stops glasses from sliding off the face.
- ❖ **Hinges:** Hinges are curved pieces on the side of the frame that connect the temples to the rim of the frame.
- ❖ **Screws:** Screws for glasses frames are located within the hinge.
- ❖ **Temples:** Temples, also known as glass arms, are the 2 pieces of the frame that go behind the ears and connect to the rim.
- ❖ **Endpieces:** Endpieces are small pieces of material such as metal or acetate that are attached to the side of the glass rim and help to connect the temples to the lenses.
- ❖ **Rim:** The rim of a glass frame refers to the structure around the lens that holds it in place.
- ❖ **Nose pads:** Nose pads are the two pieces of circular material that rest on either side of the nose and help keep the frame on the face.
- ❖ **Temple tips:** The temple tips are pieces of material, sometimes plastic or silicone that rest on the end of each temple or arm of the frame to help keep the frames in place.
- ❖ **Rivet:** Rivets are pieces of material that help connect the hinges to the frame. Rivets can also be decorative.
- ❖ **Top bar:** A top bar refers to a bar that is attached to the tops of the lenses, above the nose bridge and is often found on aviator frames.



The parts of the spectacle may differ depending on the style or design. For instance, not all glasses will have rivets or a top bar but it will generally include the rest of the above. The image below shows our Oscar Wylee Parker frames demonstrating the different parts of eyeglasses including lenses, rims, temples and rivets.

The frame design of **Oscar Wylee Parker glasses** is characterized by a square-round shape, a low nose bridge fit and an acetate frame. The Parker frame is a unisex, sophisticated glass frame.

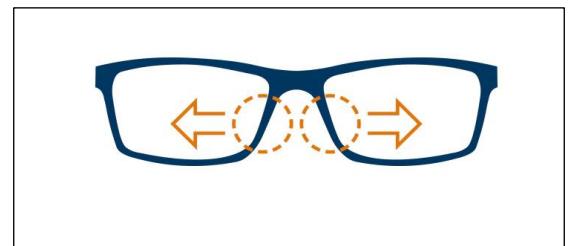


What is the Purpose of Glasses?

is to help provide vision correction and protect the eyes. Optical glasses will have a prescription or power within the lens to help correct refractive errors including myopia (nearsightedness), hyperopia (farsightedness) and astigmatism. Glasses lenses can be single-vision, meaning they have one prescription over the lens, bifocal which is two prescriptions in one lens or multifocal lenses which have three prescriptions within one lens. Glasses can also be non-prescription meaning they hold no prescription or power for vision correction but can still be useful to help protect the eyes if the lens is coated with a filter, such as a blue light filter, a tint for UV protection, or polarisation for protection against glare. Sunglasses can be both prescription and non-prescription, with those who need vision correction often able to add their prescription to their sunglasses.

Bridge area:

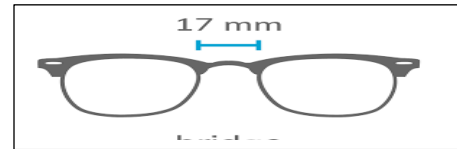
The bridge area of a frame can be constructed of either plastic or metal. Due to the variety of nose shapes, there is also quite an assortment of bridges constructed in both materials.



Types of Glasses Nose Bridge

1. The Saddle Bridge

The saddle bridge is a curved piece of plastic that spans across the entire width of your nose and follows its contours. The saddle nose bridge is the most common design in plastic or acetate frames that come without any nose pads.



The saddle bridge is very advantageous:

- ❖ It distributes the weight of the frame across a larger surface area.
- ❖ Ensures comfort and a superbly stable fit.
- ❖ It has a modern and contemporary look.
- ❖ The saddle bridge is low maintenance.

2. The Keyhole Bridge

is usually found in retro or vintage-inspired acetate and plastic frames. The keyhole bridge is shaped like an old-fashioned keyhole with a wider top and a narrower bottom.

- This type of frame bridge is a great choice if you want some wriggle room in your frame.
- The keyhole bridge is designed to distribute the weight of the frames on the sides of the nose as opposed to the top. Therefore, glasses with a keyhole bridge are great for people with wider noses.
- It has greater flexibility and aesthetic appeal. If you feel that the saddle bridge on your frame is causing your lenses to feel wonky, a frame with a keyhole bridge design might be it.

3. Double Bridge

The double bridge simply means that there is an extra metal bar connecting both the rims of the glasses above your nose bridge.

- The double bridges of glasses are stylish and functional. They infuse a high-fashion and classy feel to any pair of spectacles.
- These glass nose bridges enhance stability, durability and comfort for the spectacle-wearer.



- They are most commonly seen in the current time.

Frame types :

- Spectacle frames are made of metal, plastic or any other material. That features a front and two temples that reach behind the ears. Several types of spectacle frames are available.

- Types of frame :-

- 1) Full rim frame
- 2) supra frame
- 3) Rimless frame
- 4) Numount frame
- 5) Balgrip mountain
- 6) Double bridge frame
- 7) Half eye frame.

Types of frame material :-

- Frame material is two types

- A) plastic material &
- B) metal material.

- A) plastic material:-

Plastic material is the most commonly used material for mass production of spectacle frame. Plastic are synthetic polymers and may be grouped in to two broad categories-

- 1) Thermoplastic materials &
- 2) Thermosetting material

B) Metal frames :-

Metal frames are usually made of metal of metal alloys specially developed to suit the skin.

- There are metal frames three types

- A) precious metal-

- a) gold
- b) silver &
- c) white gold

Thank you
for listening