Astigmatism is distorted vision caused by a warpage in the optics of the eye. The image presented to the retina at the back of the eye is out of focus only for light waves entering at a certain angle, along a certain meridian. The effect is similar to what you may have observed when looking into a bent mirror, such as the "funny mirrors" in amusement parks. The image is stretched, often vertically or horizontally, although angular or oblique distortions also occur. When one has an astigmatic refractive error, the effect is that vision is blurred at all distances. Reading can be difficult. The letter G would be viewed as C as the horizontal stroke would be missing. Likewise P could be confused with F and Y for V.

The primary focusing lens of the eye is the cornea, the clear window at the very front of your eye. The internal lens, called the crystalline lens, is adjustable and alters your focus from distance to near. Sometimes, one of these two lenses may have a radius of curvature that is too steep in one meridian, and therefore too flat in the corresponding perpendicular meridian. Generally, the astigmatic optical error is caused by an aberration in the cornea. Normally, the cornea is shaped like a somewhat flattened ball, with the flatter curvature along the horizontal. The lens inside the eye is likewise flattened, but it's flat meridian is vertical. In a perfect system, the cornea and lens each contain the same amount of warpage but are opposite in orientation, thereby effectively canceling each other. Observable distortion occurs when either the cornea or the lens (usually the cornea) has excessive flattening (or steepening) in one meridian.
Astigmatism can occur alone as the sole optical error and is corrected by a lens (spectacle or contact lens) which is astigmatic opposite to that of the eye. This is called a toric or cylinder lens. Toric is the physical construction of the lens while astigmatic is the optical effect. Sometimes these terms are used interchangeably.

Astigmatism often occurs combined with myopia or hyperopia. The resulting lens is called a compound lens, incorporating the spherical power to neutralize the near or far sighted optics and cylindrical or toric to neutralize the astigmatic error. Small degrees of astigmatism do not impact the vision system significantly, as there is a built-in compensatory mechanism. As the relative amount of error increases, so does the perceived blur and eye strain.

Squinting with tightened eyelids tends to distort the cornea for a time and increases the apparent astigmatic blur. When the pressure is removed from the cornea, it returns to its previous shape and optics. Some people experience increased astigmatic blur after intensive near vision tasks. This is an effect caused by transient distortion of the crystalline lens and also returns to normal after a while.