# Quadrant II – Transcript and Related Materials (Notes)

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| **Programme** | **: Bachelor of Science (Third Year)** |
| **Subject** | **: Geology** |
| **Paper Code** | **: GEC 109** |
| **Paper Title** | **: Metamorphic Petrology** |
| **Unit** | **: 3** |
| **Module Name** | **: Fabric of metamorphic rocks (Definition)** |
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## Notes:

**Structure:**

The arrangement of the parts of a rock mass irrespective of scale, including spatial relationships between the parts, their relative size and shape and the internal featuresmof the parts.

The terms micro-, meso- and mega- can be used as a prefix dependent on the scale of the feature.

**Microstructure:** Structure on the thin section or smaller scale.
**Mesostructure**: Structure on the hand specimen scale.
**Megastructure:** Structure on the outcrop or larger scale.

**Texture**:
(a) The relative size, shape and spatial interrelationship between grains and internal features of grains in a rock.
(b) The presence of a preferred orientation on the microscope scale.

**Fabric**:
The relative orientation of parts of a rock mass.

This is commonly used to refer to the crystallographic and/or shape orientation of mineral grains or groups of grains, but can also be used on a larger scale.

Preferred linear orientation of the parts is termed linear fabric, preferred planar orientations planar fabric, and the lack of a preferred orientation is referred to as random fabric.

The **suffix -blast or-blastic** indicates that a feature is of metamorphic origin. Thus porphyroblastic means a porphyritic-like texture(large grains in a finer matrix) that is of metamorphic origin.

The **prefix blasto-** (meaning that a feature is not of metamorphic origin but is inherited from the parent rock). For example, blastoporphyritic indicates an igneous porphyritic texture that survived metamorphism so is blasto-poikilitic, blasto-ophitic , blasto-intergranular, blasto-amygdaloidal, blasto-pisolitic , blasto-oolitic.

**Fabric can be either**

a) **Relict/palimpsest** fabric- where certain feature of the parent rock survive metamorphism and are preserved in the metamorphic rocks as relics.

b) **Crystalloblastic fabric** (Imposed Isotropic and Anisotropic Fabric). This is due to recrystallization in solid sate that results in fabric called as crystalloblastic fabric. These textures are newly imposed on the rocks. Porphyroblastic and granoblastic are the most common types of crystalloblastic textures.

**Geometric Aspect of Fabric**

The three dimensional geometric array of grain boundaries and grain aggregate boundaries in a metamorphic body can be classified into two groups:

1) Isotropic or random boundaries
2) Anisotropic (boundaries having different aspects in different directions)
    a) Planar
    b) Linear
    c) Planar-Linear

The **three fabric subdivisions** used in classification of metamorphic rocks are as follows:

**1. Strongly foliated rocks:** that break readily along the foliation into slabs or plates, usually but not necessarily because of abundant oriented mica or other phyllosilicate flakes (lepidoblastic fabric). Foliation is mechanically significant.

**2. Weakly foliated rocks,** in which the foliation, though perceptible, is mechanically rather passive or insignificant; the rock tends to break across the foliation rather than along it

**3. Nonfoliated rocks** have essentially an isotropic fabric.