

# GEOL 333 Lab Final Exam Handout

## Information for Description of Rock Thin Sections

**Grain Size** - Use the following guide to determine size of mineral grains in mm.

Power	Width of Field	Radius
2.5x (low)	4.5 mm	2.25 mm
10x (medium)	1.8 mm	0.9 mm
40x (high)	0.45 mm	0.225 mm

**Igneous Grain Shape** - Describe the shape of crystals in igneous rock. **Euhedral** = good crystal outlines (flat crystal surfaces on all sides), **Subhedral** = incomplete or poor crystal outlines, **Anhedral** = no crystal outlines.

**Roundness** - Describe the roundness of grains in sedimentary rock. **VA** = very angular, **A** = angular, **SA** = subangular, **SR** = subrounded, **R** = rounded, + **WR** = well rounded.

**Arrangement** - Describe the overall arrangement of grains in the rock. Use terms like interlocking, foliated or unfoliated, and clastic or cemented.

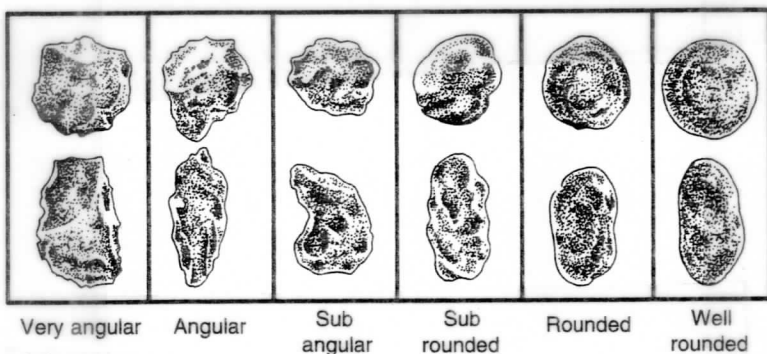
**Sorting** - Use the following terms to describe sorting in sedimentary rock: **Very well, Well, Moderate, Poor.**

**Contacts** - Describe the contacts of grains in sedimentary rock. **F** = mostly floating grains, **T** = touching or point contacts, **L** = long contacts, **CC** = concavo-convex contacts, and **S** = sutured contacts.

**Degree of Induration** - Describe how well indurated (lithified or cohesive) the rock is. If a rock crumbles to the touch, it is poorly indurated and if you cannot rub off grains with your hands, it is well indurated.

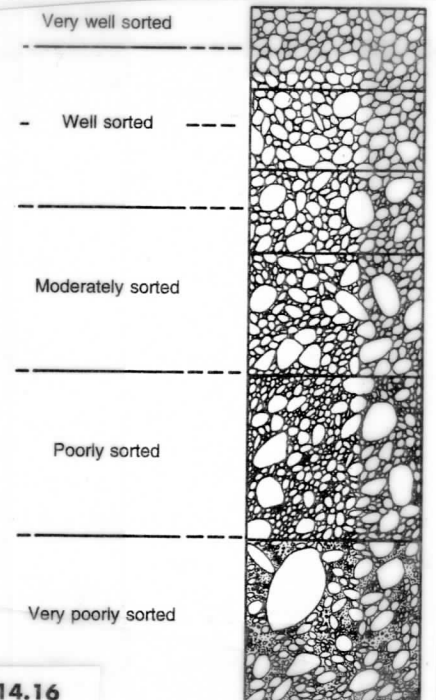
**Mineral Composition** - List the name and % abundance of all major minerals (minerals with >5% abundance) in the total rock.

**Matrix/Cement/Groundmass and Pore Space/Vesicles** - For sedimentary rock, describe the nature of any matrix, cement, and pore space, including the % abundance of each and the mineral composition of the matrix and cement. For igneous rock, describe the nature of any groundmass and vesicles, including the % abundance of each and the mineral composition of the groundmass, if possible.



**Figure 14.18** Grain roundness and angularity

from Raymond (1995) *Petrology*



**Figure 14.16**  
Degrees of sorting.

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## Information for Description of Mineral Hand Samples

Object	Moh Hardness Value
fingernail	~2.5
US penny	~3
glass plate	5.5
streak plate	~7

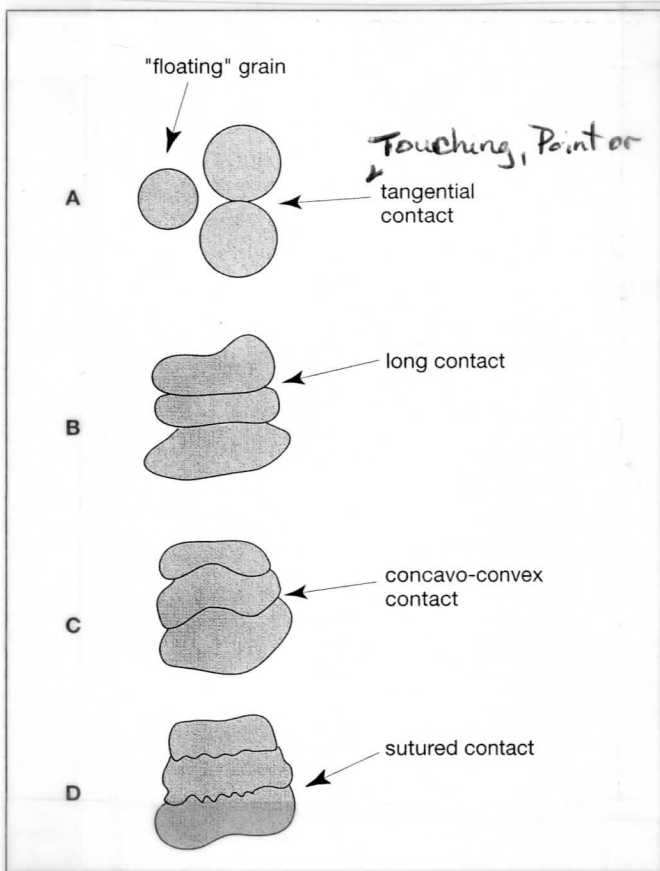
► **TABLE 3.1**

Terms Used To Describe Luster of Nonmetallic Minerals

Luster	Meaning
vitreous	having a glassy appearance
resinous	having the appearance of resin
greasy	reflecting light to give a play of colors; similar to oil on water
silky	having surfaces appearing to be composed of fine fibers
adamantine	a bright, shiny, brilliant appearance similar to that of diamonds
pearly	appearing iridescent, similar to pearls or some seashells
dull	not reflecting significant amounts of light or showing any play of colors
metallic	shiny like polished metal

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from Perkins (2002) Mineralogy

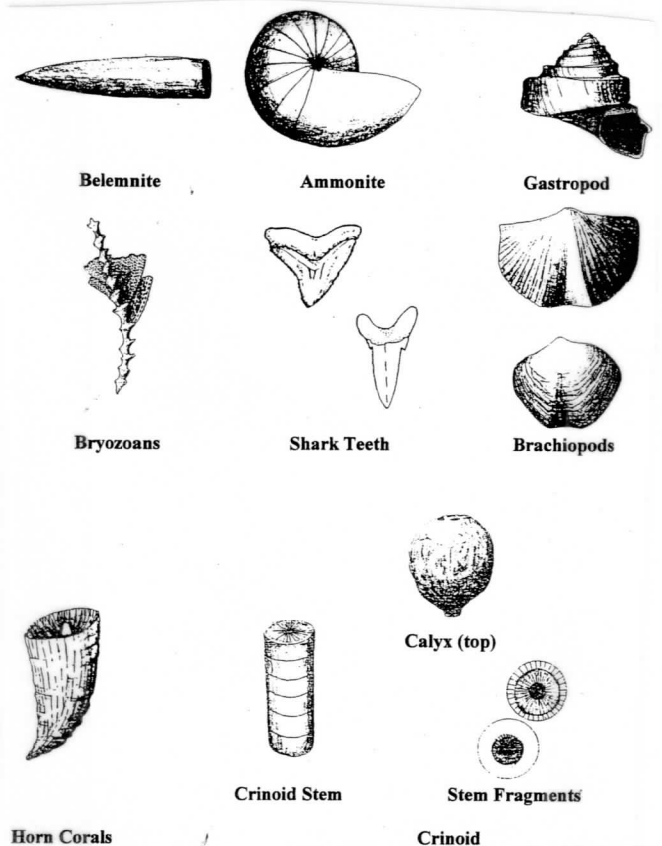


**FIGURE 3.21**

Diagrammatic illustration of principal kinds of grain contacts. A. Tangential. B. Long. C. concavo-convex. D. Sutured.

Boggs (2001) Principles of Sedimentology + Stratigraphy

## Information for Description of Rock Hand Samples



**Horn Corals**

**Crinoid Stem**

**Calyx (top)**

**Stem Fragments**

**Crinoid**

**FIGURE 10.1**

Sketches of some representative and geologically important fossils (not to scale).

from Marshak et al. (2009) Planet Earth: Discussion Guide