

Sedimentology, Stratigraphy, and Paleontology (Domain C)

[Note: Examples given below are descriptive only and are not all-inclusive lists of items]

C-1. Stratigraphic principles

- C-1.1 Naming conventions (e.g., bed, units, members, formations, contacts)
- C-1.2 Rules (e.g., superposition, original horizontality, cross-cutting relationships)
- C-1.3 Unconformities (e.g., non-conformities, disconformities, paraconformities, angular unconformities)
- C-1.4 Using and interpreting stratigraphic columns, cross sections, fence diagrams
- C-1.5 Geochronology (e.g., geologic timescale, geochronologic methods)
- C-1.6 Correlation (e.g., geomagnetic polarity reversals, rock types, index fossils)

C-2. Sedimentary structures

- C-2.1 Primary (e.g., cross-bedding, ripples, flute and tool marks)
- C-2.2 Secondary (e.g., concretions, stylolites, Liesegang banding)
- C-2.2 Biogenic (e.g., burrows, trails, stromatolites)

C-3. Diagenesis

- C-3.1 Post depositional changes (e.g., compaction, recrystallization, dissolution, replacement, cementation, lithification, reduction-oxidation reactions)

C-4. Facies analysis

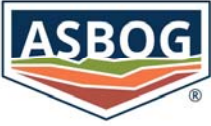
- C-4.1 Fabric (e.g., porosity, permeability, packing, isotropic vs. anisotropic)
- C-4.2 Facies changes (e.g., movements of shorelines, shallowing or deepening upwards successions)
- C-4.3 Facies-depositional environment relationships
- C-4.4 Relative sea level change (e.g., transgression, regression)

C-5. Depositional environments

- C-5.1 Clastic environments
 - C-5.1.1 Textural indicators (e.g., grain size, shape, angularity)
 - C-5.1.2 Non-Marine (e.g., glacial, eolian, alluvial, fluvial, lacustrine)
 - C-5.1.3 Transitional (e.g., deltaic, tidal, beach, lagoon, barrier island)
 - C-5.1.4 Marine (e.g., shelf, slope, rise, abyssal plain)
- C-5.2 Carbonate environments
 - C-5.2.1 Platform and bank
 - C-5.2.2 Ramp
 - C-5.2.3 Pelagic
- C-5.3 Evaporite environments

C-6. Fossil record and evolution

- C-6.1 Connections to structure of geologic time scale
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C-6.2 Index fossils

C-6.3 Biostratigraphy

C-7. Basin analysis

C-7.1 Sequence stratigraphy

C-7.2 Seismic stratigraphy

C-7.3 Depositional systems

C-7.4 Global cycles (e.g., Milankovitch cycles of eccentricity, obliquity, precession)

C-7.5 Facies architecture

C-7.6 Provenance

C-8. Project planning and development (**PG Only**):

E-8.1 Scope of work and cost estimate

E-8.2 Literature and regulatory review

E-8.3 Site-specific maps (GIS) and health & safety plan

E-8.4 Site-specific data