

## I. Introduction to the Course

## II What is Palaeontology and why study it?

- A. Biostratigraphy
- B. Evolutionary Biology
- C. Paleoecology
- D. Paleogeography
- E. Coolness Factor

## II. Types of Fossilization

- A. Unaltered Remains
- B. Casts
  - 1. Recrystallization
  - 2. Replacement
- C. Moulds
- D. Carbonization
- E. Permineralization

## III. Hard Parts

- A. Types of Hard Parts
  - 1. shell
  - 2. skeleton (exo & endo)
  - 3. test
  - 4. others
- B. Mineralogy of Hard Parts
  - 1. Aragonite
  - 2. Lo-Mg & Hi Mg Calcite
  - 3. Silica
  - 4. Phosphate

## III. Taphonomy- the study of how organisms become fossilized.

|                    | Aragonite | Low-Mg calcite | High-Mg calcite | Arag-calcite | silica | Phosphate |
|--------------------|-----------|----------------|-----------------|--------------|--------|-----------|
| Bivalves           | X         | X              |                 | X            |        | ~         |
| Gastro-pods        | X         |                |                 | X            |        |           |
| Pteropods          | X         |                |                 |              |        |           |
| Cephalopods        | X         |                | ~               |              |        |           |
| Brachiopods        |           | X              | ~               |              |        | X         |
| Scleractnians      | X         |                |                 |              |        |           |
| Rugose<br>Tabulate |           | X              | X               |              |        |           |
| Sponges            | X         | X              | X               |              | X      |           |
| Bryozoans          | X         |                | X               | X            |        |           |
| Echinoderms        |           |                | X               |              |        |           |
| Vertebrates        | X         | X              | X               |              |        | X         |
| Forams<br>benthic  | ~         |                | X               |              |        | X         |
| Forams<br>planktic |           | X              |                 |              |        |           |
| Algae              | X         | X              | X               |              |        |           |