



## Government College (Autonomous), Rajamahendravaram

(Affiliated to Adikavi Nannaya University)

### GEOLOGY SYLLABUS - (2019-20)

II B.Sc., IV-SEMESTER

#### Course IV: Structural Geology & Stratigraphy (60 Marks)

#### Course outcomes

- CO1-To understand the concepts of Structural geology, three dimensional distribution of large bodies of rocks
- CO2- To interpret stress and kinematic histories from structural measurements.
- CO3- To know about the relative position of strata and their relationship to the geological timescale
- CO4- To gain knowledge on the analysis of the order and position of layers of archaeological remains

#### Unit-I

Definition of structural geology, aim and objectives of the structural Geology; Importance of study of structures, primary and secondary structures; outcrop, attitude of beds - strike, dip and apparent dip. Use of clinometer and Brunton compass. **Folds** -description, nomenclature of folds - Geometrical and genetic classification. Recognition of folds in the field.

#### Unit-II

**Joints**- Classification of Joints- geometrical and genetic classification. **Faults** – geometrical and Genetic Classification of faults, recognition of faults in the field, effects of faults on the outcrops.

#### Unit-III

**Unconformities**- Definition of unconformity- types of unconformities. Recognition of unconformities in the field. Distinguishing the faults from unconformities. Definitions of overlap, outlier, cleavage, schistosity, foliation and lineation

#### Unit-IV

Stratigraphy: Definition and Principles of Stratigraphy. Nomenclature of Stratigraphy (Lithostratigraphy, Biostratigraphy, Chronostratigraphy, magnetostratigraphy etc.)

#### Unit- V

Standard geological time scale, Physiographic divisions of India with stratigraphic and structural characteristics.



### Text books

- |   |   |                        |
|---|---|------------------------|
| 1. Structural Geology                                   | - | Marlarid. P. Billings. |
| 2 An outline of structural Geology                      | - | E.S. Hills             |
| 1.Principals of stratigraphiy                           | - | Dunbars & Rodgers.     |
| 2. Fundamentals of Historical Geology and Stratigraphiy | - | Ravindra Kumar         |

### References

- |                                     |   |                                  |
|-------------------------------------|---|----------------------------------|
| 1. Structural Geology               | - | L.U. De Setter                   |
| 2. An outline of structural Geology | - | E.S. Hills                       |
| 3. Geology of India (Vol. 1 & 2)    | - | R. Vydyanadhan & M. Ramakrishnan |

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**LAB-IV (Practicals)**

**50 Marks**

**At the end of Fourth semester**

### **Structural Geology**

1. Study of topographical maps.
2. Interpretation of simple geological maps with horizontal and inclined beds, Unconformity, folds and faults with reference to the topography and structure, geological succession and history, Section drawing (at least 10 maps)
3. Problems dealing with true dip and apparent dip. Bore-hole data thickness and width of the outcrop and dip of the beds (At least 10 problems).
4. Finding attitude of beds using stereographic projection.
5. Arranging geological events in chronological sequence in given geological section.