

## **JM 303 (Jan) 3:1:0 (4 credits)**

**Course title: Intracellular Traffic, transport and turnover**

**Instructor: Ravi Manjithaya**

**4 credit course: Jan to Apr**

- 1 Intracellular Compartments and Protein Sorting
  - 1.1 Beginnings of Cell Biology
  - 1.2 Diversity of cell types, shapes and structures
  - 1.3 The endo membrane system
  - 1.4 Targeting molecules to specific location within the cell
- 2 Intracellular Vesicular Traffic
  - 2.1 Exocytic pathway
  - 2.2 Endocytic pathways
  - 2.3 Intra-organelle trafficking
  - 2.4 Cross-talk
- 3 Cellular degradative pathways
  - 3.1 UPS
  - 3.2 Autophagy
  - 3.3 Others

### Reference books:

1. Molecular Biology of the Cell by Alberts B, Johnson A, Lewis J, et al.
2. Molecular Cell Biology by Lodish H, Berk A, Zipursky SL, et al.
3. The Cell: A Molecular Approach by Cooper GM.
4. Trafficking Inside Cells: Pathways, Mechanisms and Regulation by Nava Segev

These topics will be dealt with discussions ranging from conceptualization to experimental approaches culminating in realization of current status and questions facing the said field. Further participation will be addressed through in promptu quiz, paper/project presentations, model building and tests. Topics will also be taught by highlighting the landmark publications and the latest development in the field with an emphasis on experimental approach. There may be guest lectures by specialists in this field.