**St. JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM**

**w.e.f. AY 2023-24**

**II Semester**

**Course No-4: CELL BIOLOGY**

BCH-Ma2-2852(3)

Credits: 2 Hours/Week: 2

**COURSE OBJECTIVES**

To enable students to-

* Learn isolation and estimation methods for Chloroplast
* Isolate cell organelles and identify them
* Visualize stages of mitosis and meiosis
* Learn nucleic acid staining methods
* Observe apoptosis

**COURSE OUTCOMES**

Students will be able to-

CO1- Isolate various cell organelles

CO2- Estimate isolated chloroplasts

CO3- Visualize and demonstrate mitosis and meiosis

CO4- Demonstrate Nucleic acid staining

CO5- Demonstrate the pattern of Apoptosis

**Practical Syllabus**

1. Estimation of Chlorophyl

2. Isolation of chloroplast

3. Isolation of mitochondria from the liver

4. Mitosis experiment

5. Meiosis experiment

6. Nuclei staining by DAPI / PI

7. Apoptosis- DNA Ladder Pattern, Annexin V staining

8. low cytometric analysis

**Recommended Books**

1. Goldman, Emanuel, and Lorrence H. Green, eds. Practical handbook of microbiology. CRC Press, 2015.

2. Dubey, R. C., and D. K. Maheshwari. Practical microbiology. S. Chand, 2002.

3. Microbiology: A laboratory manual by Cappuccino and Sherman, Pearson Education, 6th Ed