UZO-431 Cell and Tissue Culture-II Cr. (2)

Course Objectives:
The objective of the course is:-
1. To provide students with a thorough understanding of the importance of cell, tissue and organ culture and its application in life sciences.

Course Learning Outcomes:
Upon successful completion of the course, the student will be able to:
1. **EXPLAIN**the various components of cell and tissue culture media, e.g. minerals, growth factors, hormones and what governs the choice of components
2. UNDERSTAND **how to initiate, grow and harvest eukaryotic cells and their uses.**

Course Contents:
Primary Culture and Cell Lines Type of primary culture cell. Isolation of tissues.Primary culture. Cloning Selection and Molecular Techniques An overview of suspension cloning, isolation of clones, in situ molecular hybridization, production of monoclonal antibodies. Somatic cell fusion and DNA transfer. Cryopreservation and Quantification Preservation, cell banks, transporting cells. Quantification , Somatic Embryogenesis and Organogenesis, Micro-propagation.

Teaching-Learning Strategies
Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments
The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks

Text Books

1. Freshney, R.I., (2000), Culture of Animal cell: A Manual of BasicTechniques, 4th Ed., Wiley Liss.
2. Dodds, J.H., and Roberts, L.W., (1995), Experiment in Plant TissueCulture,3rd Ed., Cambridge University Press.

Books Recommended:

1. Harrison, M.A., and Rae, I.F., (1997), General Techniques of CellCulture, Cambridge University Press.
2. Dixon, R.A., (1985), Plant Cell Culture: Practical Approach, IRL Press.
3. Doyle, A., and Griffiths, J.B., (2000), Cell and Tissue Culture for Medical Research, John Wiley and Sons.
4. Chawla, H.S., (2002), Introduction to Plant Biotechnology, 2nd Ed., Science Publisher

UZO-432 Cell and Tissue Culture-II (Lab.) Cr. (1)

Course Objectives:
The objective of the course is:-
1. To provide students with a thorough understanding of the importance of cell, tissue and organ culture and its application in life sciences.

Course Learning Outcomes:
Upon successful completion of the course, the student will be able to:
1. **EXPLAIN**the various components of cell and tissue culture media, e.g. minerals, growth factors, hormones and what governs the choice of components
2. UNDERSTAND **how to initiate, grow and harvest eukaryotic cells and their uses.**

Course Contents:
Isolation of Leydig cells, Maintaining the cell lines; Primary cell culture

Teaching-Learning Strategies
Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments
The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks