Programme: M. Sc. Biotechnology

Course Code: GBC-283 **Title of the Course**: Lab V-Cell and Tissue Culture

Number of Credits: 2

Effective from AY: 2019-2020

Prerequisites for the course:	Course in cell biology	
Objective:	A comprehensive understanding of the cell and cellular functions;plant and animal tissue culture.	
Content:	1. Preparation of starting material (Biosafety cabinet, solutions, media, cell sample etc.): Cell stock preparation (glycerol stock), storage, freezing, thaw and subculture, contamination and precautions 2. Animal cell culture: Secondary cell culture HeLa and non-cancerous cell like HEK293, COS-7 3. Transfection and co-transfection: Calcium-phosphate method and Lipofection 4. Cell fixation and staining: Immunolabeling, mounting, fluorescence imaging 5. Tissue culture medium, contamination and precautions in plant tissue culture 6. Callus induction and plantletregeneration 7. Single cell suspension and Protoplast isolation	48 hours
Pedagogy:	lectures/ tutorials/assignments/self-study	
References/Readings	1. Animal cell culture (2000) – A Practical Approach John R.W. Masters 2. Culture of animal cells – A manual of Basic techniques (2005) R.I. Freshney 3. Plant tissue culture, 3rd edition(2012) –Techniques and experiment, R. Smith	
Learning Outcomes	To carry out and interpret experiments in Plant and animal tissue culture .	