Course Code: ZOO 430   **Course Title: Histology and Histochemistry**
Number of Credits: 2
Effective from AY: 2020 -21

Prerequisite for the Course:	Elementary knowledge of Cell Biology and Physiology.	
Objectives:	3. To study the microscopic organization of cells into tissues. 4. To understand the microscopic structure of tissues; their cellular function and physiological relevance.	
Content:	**Module 1:** Introduction to Histology, types of Epithelia, Histology of Brain, Spinal cord, Heart, Liver, Kidney, Digestive tract, Bones.	6 hrs
	Histological Techniques, Tissue fixatives, Processing of tissue, Microtomy, Cryotomy, Staining Principles, Mounting media, Types of Microscopy, Image capture tools, analysis and interpretations.	6 hrs
	Module 2: Principles of histochemistry and cytochemistry, detection techniques of carbohydrates, lipid, and nucleic acid, proteins, hydrolytic and oxidative enzymes, inhibitors and calcium.	6 hrs
	Cytochemical detection techniques and its principles; Principles and techniques of autoradiography, cytophotometry; Principles of Histopathology techniques and its application.	6 hrs
Pedagogy:	Lectures/Tutorials/ PBL/Videos/Assignments/Group Activities/Self-study.	
Learning Outcome:	After successful completion of this course, students will be able to: 1. To examine images of a tissue section and identify the types of tissues present, their roles, and the relationship between structure and function	
References /Reading:	1. Mescher, A. L.Junqueira's Basic Histology: Text and Atlas, Thirteenth Edition (2013) McGraw-Hill Education. 2. Paulsen, D. F. Histology and Cell Biology: Examination and Board Review, Fifth Edition (2010) McGraw-Hill Education. 3. Shyamsundari S and Hanumantha Roa K (2007) Histochemistry in focus. M J publishers, Chennai 4. A. J. Kiernan (2008) Histological and Histochemical methods: Theroy and practice, Scion Publishing Limited, Oxford 5. Gartner L P and Hiat J L (2000) Colour Atlas of Histology, Williams and Wilkins, Balitmore 6. Kierszenbaur AL (2002) Histology and Cell biology: An Introduction to pathology, Mosby Inc. St.Louis.	