

Course Code: ZOO 407

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. Histological Techniques, Tissue fixatives, Processing of tissue, Microtomy, Cryotomy, Staining Principles, Mounting media, Types of Microscopy, Image capture tools, analysis and interpretations. Module 2: Principles of histochemistry and cytochemistry, detection techniques of carbohydrates, lipid, and nucleic acid, proteins, hydrolytic and oxidative enzymes, inhibitors and calcium. Cytochemical detection techniques and its principles; Principles and techniques of autoradiography, cytophotometry; Principles of Histopathology techniques and its application.	6 hrs 6 hrs 6 hrs 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: Theory and practice, Scion Publishing Limited, Oxford 5. Gartner L P and Hiatt J L (2000) Colour Atlas of Histology, Williams and Wilkins, Baltimore 6. Kierszenbaum AL (2002) Histology and Cell biology: An Introduction to pathology, Mosby Inc. St. Louis.	