



Microtechnique

Course Code	Course Num.	Course Name	Credit Hours	Lec.	Lab.	Tut.	Prerequisites
BIO	244	Microtechnique	2	0	4	0	BIO111

Objectives:

At the end of the course the student should be able to:

- Preparation of microscopical sections & smears from different body tissues & fluids.
- Preparation of all solutions & stains used for processing.
- Preservation & storage of histological specimen.

Syllabus:

- Introduction Supply drawer check in General Lab rules and instructions.
- Classification of different microtechniques and methods: giving introduction about the different types of methods and techniques which used in preparing biological slides.
- Stripping off: for studying view of stem and leaf epidermal cells to count stomata
- Maceration and squashing: taking root tip to study cell division.
- Bone marrow collection and preparation of slide from bone marrow: to see the cells of bone marrow
- Whole mount: for study the protozoa and parasites.
- Paraffin method, steps of paraffin method, dissection of animal, fixation and dehydration: explain how the specimen preserved and dehydrated as well as the properties of fixative and specimen to be preserved,
- Clearing and mounting: giving information about these two steps and different chemicals and materials which used for each step,
- Embedding: preparing paraffin block,
- Sectioning, stretching and affixing: the paraffin blocks will be sectioned by using rotary microtome, stretched and affixed on slide to be stained by different stains and dyes ,
- Counter staining: using hematoxyline and eosin
- Freeze sectioning technique: for study the enzyme with in the cell, in which no fixation, dehydration and clearing are required,
- Electron microscopic techniques and methods: show comparison with paraffin method.

References:

- John Kiernan. Histological and Histochemical Methods, fifth edition: Theory and Practice Fifth Edition Edition,(2015). ISBN-13: 978-1907904325
- Humason, Gretchen L . Animal tissue technique, 5th ed. (2011).
- Course notes and handouts: prepared by the course instructors.

