The Hashemite University
Faculty of Science
Course Syllabus

Department of Biology and Biotechnology

Course Title: Microtechnique
Course Number: 1801041332
Pre-requisite: Bio 102
Credit Hours: 2
Designation: Elective
Instructor: Dr. Esam Qnais
Instructor's E-mail: Esamqn@hu.edu.jo
Office Hours: ANY TIME

Course Description (Catalog):
This course provides students with the skills and knowledge to prepare slides from plant and animal tissues to be examine microscopically. Fixation, washing, dehydration, clearing, impregnation, embedding, microtomy , staining and mounting will be included..

Text Book:
J.A.Kiernan, 1999, Histoilogical and histomechmical methods, theory and practice, Third edition.

Major Topics Covered:

No.of Weeks/ Contact Hours	**Topic (lecture)**	**Lab**
Week 1/3	Introduction	No lab
Week 2/3	Fixation	LAB 1 Blood smear
Week 3/3	Fixation	LAB 2: Blood smear
Week 4/3	Dehydration	LAB 3: Root tip/squash
Week 5/3	Clearing	LAB 4 Root tip/squash
Week 6/3	Infiltration and first exam	LAB 5: Whole mount
Week 7/3	Embedding	LAB 6: Whole mount
Week 8/3	Embedding	Lab mid-term exam
Week 9 /3	Staining	LAB 7: animal tissue
Week 10/3	Staining	LAB 8: animal tissue
Week 11/3	Mounting	LAB 9: animal tissue
Week 12/3	carbohydrate histochemistry and second exam	LAB 10: Plant tissue
Week 13/3	Enzyme histochemistry	LAB 11 : Plant tissue
Week 1/3	Immunohistochemistry I	LAB 12: Plant tissue
Week 15/3	Immunohistochemistry II	Lab final exam

Upon successful completion of lecture portion of this course, the students will be,

	Course Learning Outcomes (CLO)	**(SO*)**
CLO1	. The student will become familiar with skills and knowledge to prepare slides from plant and animal tissues	(a), (b),(d), (k)
CLO2	The student will become familiar with Enzyme histochemistry	(a),(b),(d), (k)
CLO3	The student will become familiar with Immunohistochemistry	(a), (b),(d), (k)

*(SO) = Student Outcomes Addressed by the Course.

❖ **Student Outcomes (SO) Addressed by the Course:**

#	Outcomes Description Applied and Natural Sciences Student Outcomes	Contribution
(a)	an ability to apply knowledge of mathematics, science, and applied sciences	H
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	M
(c)	an ability to formulate or design a system, process or program to meet desired needs	M
(d)	an ability to function on multidisciplinary teams	
(e)	an ability to identify and solve applied sciences problems	M
(f)	an understanding of professional and ethical responsibility	M
(g)	an ability to communicate effectively	
(h)	the broad education necessary to understand the impact of solutions in a global and societal context	M
(i)	a recognition of the need for, and an ability to engage in life-long learning	
(j)	a knowledge of contemporary issues	M
(k)	an ability to use the techniques, skills, and modern scientific and technical tools necessary for professional practice.	M
H=High, **M**= Medium, **L**=Low		

Assessment Instruments

	Mark
Mid Exam	**20%**
Lab and activities	**50%**
Final Exam	**30%**
Total	**100%**

Course policies

University regulations apply to this course regarding class attendance, punctuality, exams, late submissions, absence with permission, penalties for cheating, and policies for assignments and projects, if any. Students should be aware of all those in addition to other rules and regulations stated and descried in the student handbook