North Central State College

MASTER SYLLABUS	2025-2026

A. Academic Division: Health Sciences

B. Discipline: Bioscience Technology

C. Course Number and Title: BIOS1210 Histology

D. Assistant Dean: Heidi Kreglow, PT

E. Credit Hours: 4
Lecture: 2 hours
Laboratory: 4 hours

F. Prerequisites: BIOS1010
Co-requisite(s):

G. Last Course/Curriculum Revision Date: Fall 2023 Origin date: 03/10/2011

H. Textbook(s) Title:

Basic Histology / Text and Atlas

- Author(s): Luiz Carolos Junqueira and Jose Carneiro
- Copyright Year: 2023
- Edition: 17th
- ISBN: 9781264930395

I. Workbook(s) and/or Lab Manual: None

J. Course Description: This course is designed for students who are interested in medicine and animal biology. The goal of this course is to introduce students to tissues that make up organs and the basic design of each of the major organs in selected animals. Students will identify tissues using photographs, microscope slides, photographic slides, videos, and the internet (histology sites). In addition, fundamental histological techniques important to the preparation of microscope slides will be included in this course. Students will learn how to prepare tissues, embed tissues, use a microtome, and stain differentially as an aid in the identification of tissues. Finally, students will prepare slides of various tissues.

K. College-Wide Learning Outcomes

College-Wide Learning Outcomes	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Define histology.	1st week quiz, midterm (Week 8) and final examination.
2. Demonstrate the proper procedure for mixing solutions & stains.	Lab experiments and demonstrations early in the term, midterm (Week 8) and final examination
3. Demonstrate slide preparation.	Weekly lab experiments and demonstrations, midterm (Week 8) and final examination.
4. Identify the cytoplasm of a cell and explain the importance of it and its contents.	Weekly lab check-offs and presentations midterm (Week 8) and final examination.
5. Identify the cell nucleus.	Weekly performance check-offs, midterm (Week 8) and final examination.
6. Identify adipose tissue.	Weekly lab check-offs and presentations, midterm (Week 8) and final examination.
7. Identify, compare & contrast cartilage and bone.	Weekly lab check-offs and presentations, midterm (Week 8) and final examination.
8. Identify nerve tissue and explain the workings of the nervous system.	Weekly lab check-offs and presentations, midterm (Week 8) and final examination
9. Identify, compare & contrast the three types of muscle tissue.	Weekly lab check-offs and presentations, midterm (Week 8) and final examination.
10. Identify the major tissues present in the circulatory system & explain the function of this system.	Weekly lab check-offs and presentations, midterm (Week 8) and final examination.
11. Identify blood cells and compare & contrast their components.	Weekly lab check-offs and presentations, midterm (Week 8) and final examination.
12. Identify tissues and specific cells of the digestive tract.	Weekly lab check-offs and presentations midterm and final examination.
13. Identify tissues and specific cells of the respiratory system.	Weekly lab check-offs and presentations, midterm (Week 8) and final examination.
14. Identify tissues and specific cells of the urinary system.	Weekly lab check-offs and presentations, and final examination
15. Identify the structure and function of the adrenal, thyroid and parathyroid glands.	Weekly lab check-offs and presentations, and final examination.
16. Identify cells from the male and female reproductive system.	Weekly lab check-offs and presentations, and final examination.
17. Identify Photoreceptor and Audio Receptor Cells.	Weekly lab check-offs and presentations, and final examination.
18. Describe the purpose & process of the sample collection protocol and perform this protocol.	Weekly direct lab check-off and performance check-offs during that portion of the course, and final examination.
19. Describe the purpose & process of the sample fixation protocol and perform this protocol.	Weekly direct lab demos and performance check-offs during that portion of the course, and final examination.
20. Describe the purpose & process of the dehydration and clearing protocol and perform this protocol.	Weekly direct lab demos and performance check-offs during that portion of the course, and final examination.
21. Describe the purpose & process of the Paraffin embedding protocol and perform this protocol.	Weekly direct lab demos and performance check-offs during that portion of the course, and final examination.

Outcomes	Assessments – How it is met & When it is met
22. Describe the purpose & process of the Microtome sectioning protocol and perform this protocol.	Weekly direct lab demos and performance check-offs during that portion of the course, and final examination.
23. Describe the purpose & process of the Staining protocol and perform this protocol.	Weekly direct lab demos and performance check-offs during that portion of the course, and final examination.
24. Describe the purpose & process of the Microscopic examination protocol and perform this protocol.	Weekly direct lab demos and performance check-offs during that portion of the course, and final examination.

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at

https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf

North Central State College

SYLLABUS ADDENDUM

Academic Division:	Health Sciences	**Discipline:**	Bioscience
Course Coordinator:	Dr. Tony Miller		
Course Number:	BIOS 1210 920	**Course Title:**	Histology
Semester / Session:	Spring 2026	**Start / End Date:**	1/12/2026-5/8/2026

Instructor Information

Name:	Tony Miller	**Credentials:**	PhD, Ecology & Evolutionary Biology
Phone Number:	419-755-4548	**E-Mail Address:**	jmiller2@ncstatecollege.edu
Office Location:	HS-330	**Office Hours:**	M & W: 8:30-9AM; M: 11:45AM-12:15PM W: 10:55-11:25AM; TH: 8:30-11:30AM

I. Topical Timeline (Subject to Change):

Weeks	Lecture Topic	Lab Topic	Week of: (Thursday Date)
1	Introduction to Histology (CH. 1), Cytoplasm (CH. 2)	Lab Safety & The Cell **DUE: 1/22/26**	1/15/26
2	Nucleus (CH. 3), Epithelium (CH. 4)	Nucleus Lab, Epithelium Lab **DUE: 1/29/26**	1/22/26
3	Connective Tissue (CH. 5), Adipose Tissue (CH. 6)	Connective Tissue, Adipose **DUE: 2/5/26**	1/29/26
4	Unit 1 Wrap-Up & Review **Quiz 1 Due 2/5/26**	**EXAM 1 (CHs 1-6)**	**2/5/26** ***Project Proposal Due 2/5**
5	Cartilage (CH. 7), Bone (CH. 8)	Cartilage, Bone **DUE: 2/19/26**	2/12/26
6	Nervous (CH. 9), Muscle (CH. 10)	Nervous, Muscle, Circulatory **DUE: 2/26/26**	2/19/26
7	Circulatory (CH. 11)	**Lab Practical I** **(Lab Safety-Circulatory)**	2/26/26
8	Unit 2 Wrap-Up & Review **Quiz 2 Due 3/5/26** **May start blood slides	**EXAM 2 (CHs 7-11)**	**3/5/26**
Spring Break (no classes)			**3/12/26**
9	Blood (CH. 12), Hemopoiesis (CH. 13), Immunity (CH. 14)	Blood, Hemopoiesis, Immunity **DUE: 3/26/26**	3/19/26
10	Digestion (CH. 15), Digestive Organs (CH. 16), Respiratory Tissue (CH. 17)	Digestion, Digest Organs, Respiratory **DUE: 4/2/26**	3/26/26
11	Unit 3 Wrap-Up & Review **Quiz 3 Due 4/2/26**	**EXAM 3 (CHs 12-17)**	**4/2//26**
12	Skin (CH. 18), Urinary (CH. 19), Endocrine (CH. 20)	Skin, Urinary, & Endocrine **DUE: 4/16/26**	4/9/26
13	Male (CH. 21), Female (CH. 22), Eye & Ear (CH. 23)	Reproduction, Eye/Ear **DUE: 4/23/26**	4/16/26 ***Research Paper Due 4/16**
14	Unit 4 Wrap-Up & Review **Quiz 4 Due 4/23/26**	**EXAM 4 (CHs 18-23)**	**4/23/26**
15	Histology in the Real World (CH. 24), Final Exam Review	**Final Lab Practical** **(Blood through Eye/Ear)** Histology Demo Lab	**4/30/26**
16	**CUMULATIVE FINAL on May 7**	**FINAL EXAM (CHs 1-24)**	**5/7/26**

II. Course Assignments:

1. Exams (80 points X 5 = **400 Total Points**)
    a. We will have five exams during weeks 4, 8, 11, 14, & 16.
2. Lab Skills Testing (80 points X 2 = **160 Total Points**)
    a. We will have 2 lab practicals during weeks 7 & 15.
3. Lab Assignments (10 points X 22 Labs = **220 Total Points***) *Lowest 2 of 24 Labs Dropped
    a. Due the week after the lab was conducted. (Conducting 1-3 Labs per week)
4. Quizzes (20 points X 5 = **100 Total Points**)
    a. Designed to help review the material before the exam. They will be due before each exam.
5. Research Paper (**70 Total Points**)
6. Lab Attendance (10 Points X 5 = **50 Total Points***) *Allowed 1 Missed Lab (As with lab assignments, 2 lab drops)
7. Extra Credit potentially assigned, but not to exceed 20 total points

III. Grading and Testing Guidelines:

Please refer to the Master Syllabus for the NCSC grading scale.

IV. Examination Policy:

1. The reasons for which a student will be excused from taking an examination:
    a. Hospitalization (with documented verification)
    b. Death in the immediate family (with documented verification)
    c. Personal illness or illness in immediate family - (doctor's excuse required).
2. A student who misses an examination for any reason is responsible for contacting the instructor as soon as possible to reschedule the exam.
3. No makeup opportunity will be given for absences where there is not prior communication with the instructor, except in cases of emergency.

V. Class Attendance and Homework Make-Up Policy:

1. Class attendance is necessary to acquire the knowledge required to be successful in the bioscience and biotechnology fields. Absences will be excused with prior communication with the instructor, except in cases of emergencies where the student cannot communicate.
2. Students are responsible for contacting the instructor as soon as possible upon learning they will be absent from class.

VI. Classroom Expectations:

1. Be respectful at all times.
2. Plagiarism and cheating will not be tolerated.
    a. If you are found to be plagiarizing or cheating, you will automatically receive a zero for that assignment.
    b. The instructor reserves the right to escalate offenses of cheating or plagiarism to the dean or appropriate administrator.
        - Offenses could result in dismissal from the college. Be mindful and ask for help if you are unsure if you are plagiarizing or cheating.
3. Communicate regularly with your instructor.
    a. Your instructor is a resource to you. Attend office hours, email your instructor with questions, and participate in class.
    b. Your success in this course will be determined by your level of participation. Life happens. If things are getting in the way of your participation, please inform your instructor so appropriate accommodations can be made.