



## Histology - BIO 230 Syllabus

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**Course Title: Histology**  
**Course Number: BIO230**  
**Credits: 4**  
**Instructor:**  
**Email:**  
**Office:**

**Prerequisites: BIO 116 or BIO 211**

**Phone**

**Office Hours:**

**COURSE DESCRIPTION:** Histology is a four credit course with a laboratory component. In this course, students will recognize the structure and function of cells, tissues, and organs at a microscopic level. They will also identify and recognize all of the major cell and tissue types of the human body. Histology is somewhat different than other biology courses; histology is a laboratory course and lectures often take the form of slide demonstrations. The lab and lecture will be combined into a single learning experience.

### **STUDENT OUTCOMES/OBJECTIVES:**

Upon completion of this course students will be able to:

- Distinguish the organization and structure of cells, tissues, and organs.
- Identify the major epithelia (simple squamous, simple cuboidal, simple columnar, and stratified squamous), and know their locations and functions within the body.
- Describe and identify the major forms of the connective tissue.
- Describe the microscopic anatomy of compact and cancellous bone and the development stages from cartilage to bone tissue.
- Describe and identify the typical nerve cell body (nucleus, nissl bodies and axon hillock).
- Describe the organization and structure of PNS & CNS
- Describe and differentiate the three major muscle tissue types (skeletal, smooth and cardiac) and identify the locations for each type of the muscular tissue within the body.
- Describe and differentiate the microscopic structures between the arteries, veins and capillaries, and their relation to the heart. Describe the microscopic anatomy of the heart walls and valves.
- Describe the structure of blood and differentiate the plasma, red blood cells, platelets, and lymph. Differentiate between the leukocytes by staining, nucleus, size, and relative abundance.
- Describe the microscopic structure of the lymphoid tissue
- Describe the microscopic structure and organization of the digestive tract.
- Describe the structure and functions of the pancreas and the liver as digestive glands.
- Describe the respiratory tract microscopic structures.



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- Describe the microscopic anatomy and functions of the endocrine system (Pituitary, Pancreas, Thyroid, Parathyroid, and Adrenal glands).

Required Text Book: A Color Atlas of Histology, Dennis Strete, Harper Collins  
College Publishers ISBN 0-673-99190-3

### **EVALUATION CRITERIA AND METHODS:**

1. Two lecture exams 20 points
2. Three practical exams 30 points
3. Final comprehensive exam 20 points
4. Lab portfolio 30 points

**A ( 95-100), A- (90-94), B+ ( 86-89), B (80-85), B- (75-79)**

**C+ (71-74), C (65-70), D (60-64), F (LESS THAN 60)**

### **Course outline:**

| <b>Week</b> |   | <b>Lab</b>              |
|-------------|---|-------------------------|
| 1           | Introduction to Histology Proscope & MICROSCOPE |                         |
| 2           | Histology techniques                            | Slides                  |
| 3           | The Cell and cycle                              | Slides                  |
| 4           | Epithelium tissue                               | slides                  |
| 5           | Connective Tissue                               | Slides                  |
| 6           | <b>Lecture exam I</b>                           | <b>Lab Practical I</b>  |
| 7           | Cartilage & Bone                                | Slides                  |
| 8           | Muscular  | Slides                  |
| 9           | Muscular  | Slides                  |
| 10          | <b>Lecture exam II</b>                          | <b>Lab Practical II</b> |
| 11          | Nervous   | Slides                  |
| 12          | Cardiovascular                                  | Slides                  |
| 13          | Endocrine tissue                                |                         |



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|    |                          |                      |
|----|--------------------------|----------------------|
| 14 | <b>Lab Portfolio due</b> | <b>Practical III</b> |
| 15 | <b>Final exam</b>        | Slides               |
|    |                          |                      |

**Attendance & Make Up Exams.** Students are expected to follow attendance guidelines as presented in the syllabus provided by the instructor. However, in case of an emergency or illness, students are advised to notify their instructor or counselor immediately. The instructor will determine the validity of the absence. The exceptions to instructor discretion exist when members of armed forces are called for training or assignment or any case where students are legally required to be elsewhere. Pending the submission of appropriate documentation reasonable accommodations for make-up work shall be provided, and in accordance with guidelines included in the syllabus. Make up exams will be given only in extenuating circumstances. It is your responsibility to let me know that you missed an exam. All make up exams are more difficult than the original.

**COURSE REQUIREMENTS.** Attendance, punctuality and participation are required. Students missing more than 2 classes may receive a failing grade. Cell phones should be turned off in the classroom.

**Library Component:** Students are encouraged to use the library to complete their research paper. They may use database such as: Science @direct, EBSCO, and many others. The paper must follow the APA format and the student must select and extract a peer review research journal article, and write a two pages' review on that research article. You should use the HCCC library database and other resources

**Incomplete:** An INCOMPLETE grade for the course is given under specific conditions when a student, because of serious and unexpected reasons, cannot complete the requirements of the course. For example, if a student did not attend the final because of illness his or her excuse must be verified by a physician. Other absences from other assigned activities must be made up at



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another appointed time. To arrange for an incomplete grade, the student must see the instructor before final exam.

### ACADEMIC INTEGRITY

Academic integrity is central to the pursuit of education. For students at HCCC, this means maintaining the highest ethical standards in completing their academic work. In doing so, students *earn* college credits by their honest efforts. When they are awarded a certificate or degree, they have attained a goal representing genuine achievement and can reflect with pride on their accomplishment. This is what gives college education its essential value.

Violations of the principle of academic integrity include:

- Cheating on exams.
- Reporting false research data or experimental results.
- Allowing other students to copy one's work to submit to instructors.
- Communicating the contents of an exam to other students who will be taking the same test.
- Submitting the same project in more than one course, without discussing this first with instructors.
- Submitting *plagiarized* work. *Plagiarism* is the use of another writer's words or ideas without properly crediting that person. This unacknowledged use may be from published books or articles, the Internet, or another student's work.

When students act dishonestly in meeting their course requirements, they lower the value of education for all students. Students who violate the college's policy on academic integrity are subject to failing grades on exams or projects, or for the entire course. In some cases, serious or repeated instances of academic integrity violations may warrant further disciplinary action.

### DISABILITY SUPPORT SERVICES

Students with disabilities who believe that they might need accommodations in this class are encouraged to schedule an appointment with Disabilities Support Services at (201) 360-4157, as soon as possible to better ensure that such accommodations are implemented in a timely fashion. All disabilities must be documented by a qualified professional such as a Physician, Licensed Learning Disabilities Teacher Consultant (LDTC), Psychiatrist, Psychologist, Psychiatric Nurse, Licensed Social Worker or Licensed Professional Counselor, who is qualified to assess the disability that the student claims to have and make recommendations on accommodations for the student. All information provided to the Disability Support Services Program will be confidential between the program, professors involved with the student, and individual student.

“Mandatory Use of HCCC Email Address: Members of the HCCC community are required to check their official HCCC email address in order to stay current with College and course communications. All college



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business communication between faculty, students, and staff must be sent via an official HCCC email address. If an employee or student elects to forward or link his/her HCCC email to a separate and private account, that individual remains responsible for all material transmitted to that account. Employees of HCCC shall not be responsible for any material that remains undelivered, due to defects in the private non-HCCC accounts. Failure in the operations of private email accounts shall not be cause for excuse from communications between the student and the employee. Students that encounter difficulty with HCCC email should view the FAQ's section on the Portal. “

### **USE OF ELECTRONIC COMMUNICATION DEVICES:**

Cell phones and all other devices are not allowed during class or lab times. **All of them Telephone, iPod or computer**

### **Diversity, Equity, and Inclusion Statement**

Hudson County Community College (HCCC) fosters a welcoming environment that celebrates and encourages culturally responsive curricula, respects diverse viewpoints, and values discussions without censure or hostility. Our classrooms are strengthened by embracing all student voices and identities. The President's Advisory Council on Diversity, Equity, and Inclusion (PACDEI) encourages students to review DEI resources and initiatives at the following link:

<https://myhudson.hccc.edu/teamsites/Pages/pacdei.aspx>

### **Statement on Camera Usage in Remote Learning Environments**

*As a college, we strive to be student-centered and therefore encourage faculty to consider a student's individual circumstances (need for privacy, technological problems, etc.) when requiring that they turn on cameras during class. There is no legal prohibition on faculty requiring cameras be turned on during classes or college policy prohibiting such requests. If students are unable to turn their cameras on, they should communicate the circumstances to the faculty member. On-campus spaces are also available to students as an alternative to home or off campus online and remote instruction. The on-campus spaces include: Gabert Library L219, L221, L222, L419, STEM Building S217, and North Hudson Campus N224, N303D. Within these rooms, students will have access to computers, web cameras, and headsets. If there are any issues with space capacity, there are several additional rooms that can be utilized.*



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 Chemical Hygiene Coordinator  
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### Rubric for portfolio

| Student Name:  |                   |                        |                         |                              |                              |                               |  |
|--|-------------------|------------------------|-------------------------|------------------------------|------------------------------|-------------------------------|--|
|  |                   | Low<br>Mag<br>1. point | High<br>Mag<br>1.0point | Title of<br>slide<br>1.point | Label in<br>slide<br>1.point | Location in body<br>.05 point |  |
| <b>Over all organization, order and clear. 20 points</b> |                   |                        |                         |                              |                              |                               |  |
| 1  | cells             |                        |                         |                              |                              |                               |  |
| 2  | Simple Sq. Epi    |                        |                         |                              |                              |                               |  |
| 3  | Simple, Coub.Epi  |                        |                         |                              |                              |                               |  |
| 4  | Simple. Colm.Epi  |                        |                         |                              |                              |                               |  |
| 5  | Psudo.Stra.C      |                        |                         |                              |                              |                               |  |
| 6  | Transitional Ep   |                        |                         |                              |                              |                               |  |
| 7  | Stra.Sq .Kerat    |                        |                         |                              |                              |                               |  |
| 8  | Stra.Sq.Non Kar   |                        |                         |                              |                              |                               |  |
| 9  | Stra.Coub         |                        |                         |                              |                              |                               |  |
| 10   | Stra.Colm         |                        |                         |                              |                              |                               |  |
| 11   | Connective        |                        |                         |                              |                              |                               |  |
| 12   | Loose Areolar     |                        |                         |                              |                              |                               |  |
| 13   | Dense Irregular   |                        |                         |                              |                              |                               |  |
| 14   | Dense Regular     |                        |                         |                              |                              |                               |  |
| 15   | Elastic           |                        |                         |                              |                              |                               |  |
| 16   | Reticular         |                        |                         |                              |                              |                               |  |
| 17   | Adipose           |                        |                         |                              |                              |                               |  |
| 18   | Hyaline Cartilage |                        |                         |                              |                              |                               |  |
| 19   | Elastic cartilage |                        |                         |                              |                              |                               |  |
| 20   | Fibro cartilage   |                        |                         |                              |                              |                               |  |
| 21   | Compact bone      |                        |                         |                              |                              |                               |  |
| 22   | Spongy Bone       |                        |                         |                              |                              |                               |  |
| 23   | Blood Smear       |                        |                         |                              |                              |                               |  |



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|    |                            |  |  |  |  |  |  |
|----|----------------------------|--|--|--|--|--|--|
| 24 | RBC                        |  |  |  |  |  |  |
| 25 | Platelet                   |  |  |  |  |  |  |
| 26 | Granulocyte<br>Net.Eo, Bas |  |  |  |  |  |  |
| 27 | Monocyte                   |  |  |  |  |  |  |
| 28 | LymphocyteT, B             |  |  |  |  |  |  |
| 29 | Skeletal Muscle            |  |  |  |  |  |  |
| 30 | Cardiac Muscle             |  |  |  |  |  |  |
| 31 | Smooth Muscle              |  |  |  |  |  |  |
| 32 | Neuron                     |  |  |  |  |  |  |
| 33 | Neuroglial                 |  |  |  |  |  |  |
| 34 | Spinal cord                |  |  |  |  |  |  |
| 35 | Ganglia                    |  |  |  |  |  |  |
| 36 | Cerebellum                 |  |  |  |  |  |  |
| 37 | Cortex                     |  |  |  |  |  |  |