

## CLS 465: MOLECULAR PATHOLOGY

**Instructor:** Michelle Shulfer, MS Ed., MLS (ASCP)<sup>CM</sup>  
**Office:** B-149, Science Bldg.  
**Phone:** 715-346-2780  
**E-mail:** [mshulfer@uwsp.edu](mailto:mshulfer@uwsp.edu)  
**Office Hours:** Anytime by appointment

### COURSE DESCRIPTION:

CLS 465: Molecular Pathology (3 cr.)

Students will study the composition, structure, function, and characteristics of DNA. Laboratory exercises use clinical laboratory techniques to isolate, amplify, manipulate, and analyze DNA sequences. Students will learn how the results relate to human health and disease states.

### FORMAT:

2 hours lecture per day followed by lab. Students will be held responsible for the material assigned to read. Students will be given ample opportunity to complete assignments and will be held responsible for the completion of lab exercises each day. Labs utilize enzymes that degrade quickly. Products from each lab session are used in subsequent labs, hence no make-up labs will be permitted.

### CORE ABILITIES:

- Communicate Effectively ~verbally & in writing
- Think Critically
- Exercise Problem-Solving Skills
- Work Collaboratively in Diverse Teams
- Respect Cultural Diversity & Pluralism

### COURSE GOALS AND PURPOSES:

1. To develop an understanding of the critical nature of laboratory data in diagnosing diseases/conditions associated with hemostasis.
2. To appreciate and understand the importance of laboratory data in diagnosing and monitoring coagulation disorders.
3. To recognize abnormal data, interpret and correlate data with coagulation disorders.

**Students must attain a minimum of 60% in lecture AND 60% in lab. Failure to achieve one or both of these minimums will result in a final course grade of "F".**

### ATTENDANCE:

Attending class will likely be the single most important factor in determining your performance and grade in the course, so plan to attend every class! The relationship between attendance and achievement in education has been extensively documented in peer-reviewed research. ***I am not able to re-teach the material to you in the event that you are absent, but you can ask a classmate to share notes.*** Absences will be excused only with appropriate proof (i.e., note from a physician, funeral notice of an immediate family member, athletic competition, or military service).

### **GRADING SYSTEM:**

A 90-100%	C+ 75-79%	D 60-64%
B+ 85-89%	C 70-74%	F < 60%
B 80-84%	D+ 65-69%	

### **EXAMS/QUIZZES:**

1. Exams / quizzes must be taken on the day scheduled unless prior arrangements have been made with the instructor. Appropriate proof for an excused absence must be presented. Make up exams must be taken within 48 hours of scheduled exam periods.
2. Comprehensive final exam will cover the lecture & lab material.
3. Quizzes will be used at the discretion of the instructor to assess the progression of learning.

### **DERIVATION OF COURSE GRADES:**

Total points percentage.

### **REQUIRED TEXTS:**

*Molecular Diagnostics: Fundamentals, Methods, & Clinical Applications, 2<sup>nd</sup> edition*  
Lela Buckingham

### **REFERENCE TEXTS:**

*Molecular Diagnostics For the Clinical Laboratorian*  
William B. Coleman & Gregory J. Tsongalis

*Molecular Pathology: Approaches to Diagnosing Human Disease in the Clinical Laboratory*  
Edited by Ruth A. Heim & Lawrence M. Silverman

*Principles of Molecular Virology, 3<sup>rd</sup> edition*  
Alan J. Cann

*DNA Science: A First Course 2<sup>nd</sup> edition*  
David A. Micklos & Greg A. Freyer

*Supplemental texts and journal articles will be provided as needed.*

### **COMMUNICATING WITH YOUR INSTRUCTOR:**

1. **Email** is the quickest way to reach me at [mshulfer@uwsp.edu](mailto:mshulfer@uwsp.edu). I will respond or talk with you in person in a reasonable amount of time (~24 hours). Please note, I do not check email on a regular basis after 5 pm. It is not uncommon for instructors to receive as many as 100 emails from students, university & professional committees, etc. in a day. Please be respectful and professional in all correspondences. Yours should be clear, concise, include the course number, section, and your student ID #.
2. **Phone:** You may call my office at 715-346-2780. Please leave a voicemail if I do not answer as I may be with another or away from my desk.
3. **Office hours:** I am available by appointment during the summer session. Individual meetings can be arranged through an email request, phone call, or conversation directly before or after class. I do not hold normal office hours during the following weeks: Thanksgiving week, Christmas break, Winterim, Spring Break, Summer Break, or finals weeks.

**The following is from the SHCP Student Handbook** (modified slightly for this course) which may be found on the SHCP website

<http://www.uwsp.edu/shcp/Documents/MT/Handbook.pdf>

### **General Student Expectations**

1. You are expected to complete lessons, assignments, quizzes, and exams according to the course schedule, syllabus and/or calendar. If an emergency or illness occurs that prevents you from accomplishing the above, it is **your responsibility to contact the instructor (in person, by telephone, voicemail or email) prior to the absence.**
2. It is your responsibility to read and obtain notes or course materials from other students. Each instructor reserves the right to determine how they will incorporate lessons, assignments, quizzes, and/or exams not completed into your final grade.
3. It will be the instructor's decision to allow or not allow make-up lessons, assignments, quizzes and/or exams pending proper proof for the excused absence (i.e., funeral notice, doctor's note).
4. Verification of your attendance in class will be accomplished by the completion of class assignments, participation evaluation and/or the taking of attendance. Class attendance records may be reviewed as part of determining the affective portion of your evaluation that counts toward determination of your grade by your instructor. If an absence is lengthy, the you may not receive credit and may be asked to repeat the course the next time it is offered.
5. **Cell phones must be turned off and stowed away during all lectures, quizzes, exams and laboratory experiences.** Research supports that having visual access to a cell phone diminishes our ability to learn. Checking social media, texts, emails, and messages is unprofessional and disrespectful to our class community. Please turn off your phone during class. If I notice you are using your phone during class I may ask you to share what you are researching or ask you to put it away. Thank you for following these guidelines as they help create a positive learning community.
6. The format for make-up exam/quiz may differ from the original exam delivered in class.
7. Exam/Quiz days:
  - a. Use of any electronic devices is not allowed during any quiz or exam both in lecture and laboratory experiences (except approved calculators). Cell phones must be turned off and stowed in backpacks during exams/quizzes.
  - b. All backpacks, hats, water bottles, coffee cups, etc. must be placed in the front of the room before an exam/quiz. Only an approved calculator and 2 pencils will be allowed at the students' desk during an exam.

### **Professional Demeanor**

1. You will interact professionally with instructors and peers at all times. Courteous behavior and use of only appropriate language will be expected.
2. You will demonstrate appropriate professional demeanor by promptly and consistently attending all classroom and laboratory sessions.
3. You will follow all safety policies and other procedural guidelines consistent with OSHA and university requirements. Personal protective equipment must be worn at all times in the laboratory.
4. You will demonstrate appropriate professional demeanor by consistently remaining in the work area during scheduled lab times and completing all required work in a thorough manner.
5. You will demonstrate appropriate professional demeanor by adhering to the current dress and appearance codes while in the laboratory. Absolutely no open-toed shoes may be worn in the lab.

6. You will demonstrate a high degree of professional demeanor by consistently cleaning/disinfecting work areas when entering and leaving the laboratory and returning supplies to their original location at the beginning of the lab session.
7. Professionalism will be assessed mid-term and at the end of the term collaboratively by the CLS faculty & staff. You will receive a copy of the assessment midterm.

### **Health Requirements**

#### **1. Hepatitis B Vaccination (HBV)**

The series of three injections for Hepatitis B immunization is strongly recommended for individuals at risk of exposure to blood or other potentially infectious materials. Documentation & proof of vaccination is required.

The Hepatitis B vaccination is a noninfectious yeast-based vaccine administered as a series of three injections. It is prepared from recombinant yeast cultures, rather than from human blood or plasma. Thus, there is no risk of contamination from other bloodborne pathogens nor is there any chance of developing HBV from the vaccine.

The second injection should be administered one month after the first and the third injection six months after the initial dose. More than 90% of those vaccinated will develop immunity to the Hepatitis B virus. To maximize development of immunity, it is important for individuals to receive all three injections. Currently, it is unclear how long the immunity lasts, so booster shots may be required at some time in the future.

The vaccine causes no harm to those who are already immune or to those who may be HBV carriers. Individuals may opt to have their blood tested for antibodies to determine the need for the vaccine. Anyone who declines vaccination must complete a declination form. This form will be kept on file. If an individual experiences an exposure incident (needle stick, blood splash in the eye, etc.), a confidential medical evaluation must be completed by a licensed health care professional. An appropriate follow-up procedure is also determined. The HBV and HIV status of the source individual is determined to the extent possible as provided by law. The health professional follows guidelines of the US Public Health Service in providing treatment. The health care professional must give a written opinion on whether or not HBV vaccination is recommended at this time and whether the exposed individual received it. Medical records are confidential. HIV or HBV status must not be reported. The expense of vaccinations and titers is your responsibility.

#### **2. Other Health Conditions**

Notify your laboratory course instructors if other medical/surgical conditions exist. The notification will serve in your best interest regarding potential health and safety issues. Program continuance and department expectations of you will remain the same. Medical information remains confidential.

### **ACADEMIC MISCONDUCT: (Dismissal from the Program)**

You will maintain academic standards, ethics, and honesty, including UWSP, SHCP, and individual course standards. The following policy statement does not replace, but rather defines the SHCP cheating policy as it relates to all students in the programs. **SHCP faculty equate unethical and/or dishonest behavior as demonstration of the potential for harmful and life-threatening behavior in the clinical setting.** Therefore, **cheating in any of its forms will not be tolerated.** The following activities are specifically prohibited and will warrant a warning or reprimand, failure or reduction of your grade on an assignment or exam, probation, temporary or prolonged suspension, or permanent expulsion from the SHCP programs.

1. **Cheating** includes but is not limited to the following:
  - a. Copying from another student's test/quiz paper.
  - b. Copying from another student's assignment without faculty approval for collaboration.
  - c. Using materials, or inappropriate procedures during a test/quiz not authorized by the person giving the test/quiz.
  - d. Collaborating with any other person during a test/quiz without faculty approval for collaboration.
  - e. Knowingly obtaining, using, buying, selling, voluntarily revealing, transporting, or soliciting in whole or in part the contents of any test/quiz without authorization of appropriate official.
  - f. Bribing any other person to obtain a copy of a test/quiz.
  - g. Soliciting or receiving unauthorized information about any test/quiz.
  - h. Substituting for another student or permitting any other person to substitute for you in completing a test/quiz.
2. **Plagiarism** is the unacknowledged use of any other person or group's ideas or work. This includes purchased or borrowed papers.
3. **Collusion** is the unauthorized collaboration with another person in preparing assignments or projects in course work.
4. **Falsification** is the intentional and unauthorized altering or inventing of any information or citation in an academic exercise, activity, or record-keeping process.
5. **Giving, selling, or receiving unauthorized course or test information.**
6. **Using any unauthorized resource** or aid in the preparation or completion of any course work, exercise, or activity.
7. **Infringing on the copyright law of the United States** which prohibits the making of reproduction of copyrighted material except under certain specified conditions.
8. **Falsifying data** and submitting as true, authentic data.
9. **Altering test responses after the test is corrected** and stating that altered response was actually misread by the faculty or staff reviewing the test responses.

You are subject to cheating policies, codes, definitions, and sanctions established by the SHCP, the University of Wisconsin System, and the University of Wisconsin – Stevens Point. Please refer to the university handbook for details <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>

Specific SHCP sanctions that typically apply to cheating during test-taking or to cheating on class assignments are listed below.

1. **Warning.** A warning will be issued if the incident cannot be verified beyond a reasonable doubt. A warning is a verbal or written notice to you that your conduct may be in violation of UWSP and/or SHCP's rules and regulations. Continuation of such conduct or actions may result in further disciplinary action.
2. **Grade Reduction.** Reduction by one full letter grade of your grade for the course (example B to C) will be implemented if you have previously committed no verifiable acts of cheating.
3. **Failure of course.** A failing grade for the course will be assigned if you have previously participated in at least one verifiable act of cheating.
4. **Dismissal from the Program.** Dismissal from the program will be implemented if:
  - a. you previously participated in more than one verifiable act of cheating.
  - b. you fail to meet time deadlines to correct deficiencies pursuant to academic probation matters.
  - c. you fail to attend a scheduled practicum.
  - d. you fail to successfully complete a practicum with minimum proficiency.

- e. you fail to consistently follow guidelines for protection of self and others in matters regarding health and safety.

You are encouraged to consult with your instructor or advisor if you are having problems meeting program goals, objectives, or academic standards. The following provides a summary of the due process procedure which should be followed.

1. Schedule a conference with your clinical or academic instructor.
2. If unsatisfactory progress is made or no resolution can be reached, schedule a meeting with your director, program coordinator, or department chair for review and resolution of the matter.

**INCLUSIVITY:**

It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students’ learning needs be addressed both in and out of class, and that the diversity that the students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender identity, sexuality, disability, age, socioeconomic status, ethnicity, race, nationality, religion, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups.

If you have experienced a bias incident (an act of conduct, speech, or expression to which a bias motive is evident as a contributing factor regardless of whether the act is criminal) at UWSP, you have the right to report it by contacting the Dean of Students office directly at [dos@uwsp.edu](mailto:dos@uwsp.edu).

**CONFIDENTIALITY:**

Learning requires risk-taking and sharing ideas. Please keep your classmates’ ideas and experiences confidential outside the classroom unless permission has been granted to share them.

**EQUAL ACCESS FOR STUDENTS WITH DISABILITIES:**

UW-Stevens Point will modify academic program requirements as necessary to ensure that they do not discriminate against qualified applicants or students with disabilities. The modifications should not affect the substance of educational programs or compromise academic standards; nor should they intrude upon academic freedom. Examinations or other procedures used for evaluating students' academic achievements may be adapted. *If modifications are required due to a disability, please inform the instructor and contact the [Disability and Assistive Technology Center](#) to complete an Accommodations Request form. Phone: 346-3365 or Room 609 Albertson Hall.*

**HELP RESOURCES:**

<b><u>Tutoring</u></b>	<b><u>Advising</u></b>	<b><u>Safety and General Support</u></b>	<b><u>Health</u></b>
<b><u>Tutoring and Learning Center helps with Study Skills, Writing, Technology, Math, &amp; Science. 018 Albertson Hall, ext 3568</u></b>	<b><u>Academic and Career Advising Center, 320 Albertson Hall, ext 3226</u></b>	<b><u>Dean of Students Office, 212 Old Main, ext. 2611</u></b>	<b><u>Counseling Center, Delzell Hall, ext. 3553. Health Care, Delzell Hall, ext. 4646</u></b>

**UWSP Service Desk**

The Office of Information Technology (IT) provides a Service Desk to assist students with connecting to the Campus Network, virus and spyware removal, file recovery, equipment loan, and computer repair. You can contact the Service Desk via email at [techhelp@uwsp.edu](mailto:techhelp@uwsp.edu) or at (715) 346-4357 (HELP).

**Care Team**

The University of Wisconsin-Stevens Point is committed to the safety and success of all students. The Office of the Dean of Students supports the campus community by reaching out and providing resources in areas where a student may be struggling or experiencing barriers to their success. Faculty and staff are asked to be proactive, supportive, and involved in facilitating the success of our students through early detection, reporting, and intervention. As your instructor, I may contact the Office of the Dean of Students if I sense you are in need of additional support which individually I may not be able to provide. You may also share a concern if you or another member of our campus community needs support, is distressed, or exhibits concerning behavior that is interfering with the academic or personal success or the safety of others, by contacting the Dean of Students office or by calling university police (911).