



Marshall University Syllabus
College of Science
Forensic Science Graduate Program

Course

Biochemistry: Forensic Science

Course Description

This comprehensive course in biochemistry focuses on concepts appropriate to forensic science and designed to meet forensic science educational standards at a national level..

Credits

4 Graduate Credits

Prerequisites

Admission to the Forensic Science Graduate Program

Term/Year

Fall 2024

Class Meeting Days/Times

M,W, and Friday from 3- 5 PM

Location

Forensic Science Center Annex A113/115

Academic Calendar

For beginning, ending, and add/drop dates, see the [Marshall University Academic Calendar](https://www.marshall.edu/academic-calendar/) (URL: <https://www.marshall.edu/academic-calendar/>).

Instructor

Kelly Beatty, MS and Lauren Richards Waugh, Ph.D.

Contact Information

Lauren Richards Waugh, Ph.D.

- Office: Forensic Science Center WW200EE

- Office Hours: Monday through Thursday 10 AM to 12 PM – Please try to email and make an appointment just so if I have a meeting or an issue pop up, I can work with you to be sure to get to you as quickly as possible.
- Office Phone: 304-691-8940
- Marshall Email: Richards18@marshall.edu

Kelly Beatty, MS

- Office: Forensic Science Center WW200B
- Office Hours: M-Th 9-11 am or by appointment
- Office Phone: 304-691-8953
- Marshall Email: kbeatty@marshall.edu

Health and Safety Information

All members of the Marshall University community are expected to always observe health and safety protocols. This includes general health and safety protocols as well as specific protocols that might emerge in response to community and campus health conditions.

Campus Carry Policy

University Policy, UPGA-12 (Campus Carry Policy) derives its authority from West Virginia State law, including the Campus Self-defense Act (W. Va. Code § 18B-4-5b). It pertains to the exercise of Concealed Carry on Marshall University's campus, except in designated areas, by individuals with a valid permit to Conceal Carry.

Individuals who choose to Conceal Carry are responsible for knowing and understanding all applicable federal, state, and local laws and Marshall University Board of Governors Rules, University Policies, and Administrative Procedures. University Policy, UPGA-12 applies to areas of campus and buildings that are directly under the possession or control of Marshall University.

Concealed Handguns are not observable to others and must be holstered and concealed on the body of the permit holder or in a personal carrier, such as a backpack, purse, or other bag that remains under the exclusive and uninterrupted control of the permit holder. This includes wearing the personal carrier with a strap, carrying or holding the personal carrier, or setting the personal carrier next to or within your immediate reach at all times. If your participation in class activities impedes your ability to maintain constant control of your Handgun, please make alternate arrangements prior to coming to class.

Faculty Office

NOTICE: University Policy, UPGA-12 (Campus Carry Policy) defines Sole Occupancy Offices as areas that may restrict Concealed Carry. Please be aware that my office is a Sole Occupancy Office and this statement serves as notice that concealed

weapons or handguns are not permitted in my office. If you plan to attend a meeting in my office or to drop by my office, secure your weapon or handgun appropriately before you arrive.

Required and/or Recommended Texts and Materials

Required Texts and Materials

E-book of Nelson, Lehninger Principles of Biochemistry, 8e

[Getting Started Guide for Students](#)

[Instructions to Enroll in Your Achieve Course via Blackboard Ultra](#)

Course Student Learning Outcomes

Course Objectives: The lectures in this course cover a wide range of topics focusing primarily on the structure and function of cellular components such as proteins, carbohydrates, lipids, and nucleic acids. Emphasis will be also placed on enzymes and the chemistry of enzyme catalyzed reactions, metabolism of DNA and RNA, protein synthesis, cell membrane transport, and signal transduction.

Course Requirements/Due Dates

You will be given access to lectures and handouts through Teams for the first section of the course. You may bring a laptop and take notes directly into the PPT file during lectures. You are expected to have read any assigned reading materials and applicable chapter(s) in the text prior to class. All cell phones and other devices should be silenced and put away during lecture. **Playing computer games and/or texting during lectures is considered rude behavior towards the lecturer and may be detrimental to your grade!**

There will be three exams throughout the semester. They will be spaced as evenly as possible throughout the semester. If we get behind in covering the material listed in the syllabus, the exam will cover on through what has been discussed. You are expected to read all material and notes relevant to the lectures prior to class. Exam questions are primarily short answer and may be cumulative. Objectives provided for each lecture are aimed toward helping you to prepare for exams. I attempt to cover all material in objectives, but exam questions are not limited to only the lecture objectives. All material presented in class is testable.

Additionally, there will be graded homework assignments

Grading Policy

Exams may only be missed for an excused absence.

Exam/Assignment	Point Value
Exam 1	100
Exam 2	100

Percentage of points	Grade
90-100	A
80-89	B

Exam 3	100
Exam 4	100
Exam 5	100
Homework	100
Quizzes and in-class work	100
Attendance/Participation	10

70-79	C
60-69	D
59 and below	F

Exams: The exams will focus on materials presented in class. All PowerPoint presentations will be provided through Teams and/or Blackboard. Each exam will be based on multiple choice questions and/or descriptive essays. These essays are at times thought provoking requiring you to apply learned concepts in simulated situations.

Attendance/Participation Policy

Attendance is Mandatory: Students enrolled in the Forensic Science Program are expected to attend all classes, laboratories, seminars, internship sessions, and presentations offered by guest speakers. Should you need to miss classes due to COVID-19, appropriate accommodations will be provided.

Excused Absences: The professor must be notified of absences. Formal documentation is required for Excused Absences which may involve physician statements excusing the student from class, obituaries, or professional travel documentation. No exams, labs, or other formal exercises will be made up without an Excused Absence. With an Excused Absence, the student may be asked to take an exam BEFORE the scheduled date. Examples of Excused Absences include

- Personal Medical Emergency – Formal documentation is required from a licensed physician or appropriate healthcare provider
- Death in the Immediate Family – Documentation required
- Forensic Professional Travel – Documentation required. Marshall University Forensic Science Program, Marshall University, the West Virginia Policy Board for Higher Education are not liable for accidents or injuries incurred during trips within or out of the state.

Punctuality: On time arrival is expected of all students. A **point deduction of 20 points** will be made if a lack of punctuality is persistent (>3 times for the semester).

University Policies

By enrolling in this course, you agree to the University Policies. Please read the full text of each policy (listed below) by going to [MU Academic Affairs: University Policies](https://www.marshall.edu/academic-affairs/policies/). (URL: <https://www.marshall.edu/academic-affairs/policies/>)

- Academic Dishonesty Policy
- Academic Dismissal Policy
- Academic Forgiveness Policy
- Academic Probation and Suspension Policy
- Affirmative Action Policy
- Pre-Finals Week Policy
- D/F Repeat Rule
- Excused Absence Policy for Undergraduates
- Inclement Weather Policy
- Sexual Harassment Policy- Title IX prohibits the harassment of students based on sex, which includes pregnancy, childbirth, and related conditions. This includes that students will not be penalized for taking medically

necessary leave related to pregnancy, childbirth, or related conditions.
Marshall's Title IX Office may be contacted at TitleIX@marshall.edu

- Students with Disabilities (Policies and Procedures)
- University Computing Services Acceptable Use Policy

***FALL 2024 FSC 624 Biochemistry Course Schedule**

Session I: Instructor- Kelly Beatty, MSFS

WEEK 1

8/19	M	3pm-5-pm	Forensic Biochemistry	Introduction and importance of testing
8/21	W	3pm-5-pm	Forensic Biochemistry	History, key terms, common items
8/23	F	3pm-5-pm	Forensic Biochemistry	Evidence Handling, documentation

WEEK 2

8/26	M	3pm-5-pm	Forensic Biochemistry	Blood - composition, relevance, and testing
8/28	W	3pm-5-pm	Forensic Biochemistry	Semen – composition, relevance, and testing
8/30	F	3pm-5-pm	Forensic Biochemistry	Other body fluids (saliva, urine, feces) – composition, relevance, and testing

WEEK 3

9/2	M	3pm-5-pm	Labor Day Holiday	No Class
9/4	W	3pm-5-pm	Forensic Biochemistry	New techniques (mRNA, microRNA, DNA methylation)
9/6	F	3pm-5-pm	Forensic Biochemistry	Reporting results, human factors

WEEK 4

9/9	M	3pm-5-pm	Forensic Biochemistry	Hands on serology lab 1
9/11	W	3pm-5-pm	Forensic Biochemistry	Hands on serology lab 2
9/13	F	3pm-5-pm	EXAM 1	Biochemistry Exam 1

Session II: Instructor- Dr. Lauren Waugh, PhD

WEEK 5 – September 16-20

Chapters 2-3

WEEK 6 September 23-27

Chapters 4 and 6

WEEK 7 – September 30 to October 4

Chapter 7

EXAM – FRIDAY, October 4th

Chapters 2,3,4,6 and 7

WEEK 8 – October 7-11

Chapters 8 and 10

WEEK 9 October 14-18

Chapters 11 and 12

WEEK 10 – October 21-25

Chapter 13

EXAM – FRIDAY, October 25th

Chapters 8, 10, 11, 12, and 13

WEEK 11 – October 28 to November 1

Chapters 14 and 15

WEEK 12 – November 4 – November 8

Chapters 16 and 18

WEEK 13 – November 11-15

Chapter 19

EXAM – FRIDAY, November 6th

Chapters 14, 15, 16, 18, and 19

WEEK 14 – November 18 - 22

Chapters 24 and 25

11/25 – 11/29 THANKSGIVING BREAK - NO CLASS

WEEK 15 – PRE-FINALS WEEK – December 2 - 6

Chapters 26 and 28

FINAL WEEK

EXAM – WEDNESDAY, December 11

Chapters 24, 25, 26, 28