

GBS 707 – Biochemistry/Metabolism

Credit Hours | 2018 | September 18 – October 29 | 8 am – 10 am | BBRB 170

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GBS Vision Statement:

“Demonstrating world-class excellence in all areas of biomedical research through the achievements of our students.”

GBS Mission Statement:

“Driving biomedical discovery through interdisciplinary training and innovative research.”

GBS Core Competencies:

GBS offers a wide array of courses, seminars, journal clubs, research opportunities, and professional development that are designed to support the growth and development of our students. The following list consists of desirable competencies for our students to achieve while in this course:

- Content-Specific Conceptual Knowledge
- Critical Thinking and Data Evaluation
- Quantitative Analysis
- Research-Skill Development
- Communication Skills
- Professionalism
- Leadership & Management Skills
- Career Exploration and Preparation
- Personal Development
- Responsible Conduct of Research
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Course Objectives:

The purpose of this course is to equip and provide students a basic understanding of the principles of biological chemistry, which include the application of these principles to research protocols and performance.

Required Textbooks/Additional Course Readings:

This course recommends Voet and Voet, “Biochemistry” 4th Edition. John Wiley & Sons, Inc.

Practical Applications/Problem Sets Sessions: These sessions are tied directly to class lectures. Students will be given questions in the form of experimental problems and/or the development of an experimental design to test a hypothesis. Journal articles and/or other pieces of scientific literature will also be provided as supplemental materials relevant to the assigned questions, and will be loaded onto Canvas. During these sessions, students and the lecturer will discuss each question to develop an understanding of how to interpret experimental results and employ appropriate experimental design to

UAB GRADUATE BIOMEDICAL SCIENCES

test a hypothesis. Students will be required to turn in their assigned questions prior to class, and will receive a "1" or "0" points, which will be added onto their final grade.

Grading:

Final grades will be based upon the total points of 3 exams proctored over the course of the class, plus bonus points given based upon the Practical Applications/Problem Sets.

Course Outline:

DATE	TOPIC	LECTURER
Sept 18	Primary structure of proteins	Renfrow
Sept 19	Secondary structure of proteins	Petit
Sept 20	Tertiary structure of proteins	Petit
Sept 21	<i>Practical Applications/Problem Sets</i>	Petit and Renfrow
Sept 24	Reading/Study Day	No class
Sept 25	Enzyme kinetics	Patel
Sept 26	<i>Practical Applications/Problem Sets</i>	Patel
Sept 27	Reading/Study Day	No Class
Sept 28	Exam 1	STAFF
Oct 1	Carbohydrate Metabolism I	Hel
Oct 2	Carbohydrate Metabolism II	Hel
Oct 3	Electron Transport / OXPHOS	Bailey
Oct 4	<i>Practical Applications/Problem Sets</i>	Hel
Oct 5	Citric Acid Cycle	Wende
Oct 8	Mito Dynamics / Biogenesis	Rowe
Oct 9	Mitochondrial Genetics	Ballinger
Oct 10	<i>Practical Applications/Problem Sets</i>	Bailey/Rowe/Ballinger
Oct 11	Reading/Study Day	No Class
Oct 12	Exam 2	STAFF
Oct 15	Lipid Metabolism	Pollock
Oct 16	<i>Practical Applications/Problem Sets</i>	Pollock
Oct 17	Nucleotide metabolism	Detloff
Oct 18	<i>Practical Applications/Problem Sets</i>	Detloff
Oct 19	Amino acid metabolism	Bolisetty
Oct 22	<i>Practical Applications/Problem Sets</i>	Bolisetty
Oct 23	Integration of metabolism	Young
Oct 24	<i>Practical Applications/Problem Sets</i>	Young
Oct 25	Reading/Study Day	No Class
Oct 26	Exam 3	STAFF
Oct 29	OFF/Makeup Day	

Disability Support Services:

UAB is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services (DSS) for information on accommodations, registration and required procedures. Requests for reasonable accommodations involve an interactive process and consists of a collaborative effort among the student, DSS, faculty and staff.

To Register for Disability Support Services - Contact DSS at (205) 934-4205 (voice) or (205) 934-4248 (TDD). You must present documentation verifying your disability status and the need for accommodations. After DSS receives your completed documentation, you will meet individually with a member of the DSS staff to discuss your accommodations. It is best to register with DSS when you apply to UAB, as it may take 2-3 weeks to review your request and complete the process. For more information about Disability Support Services or to make an appointment, please feel free to contact the office directly at the Hill Student Center, 1400 University Boulevard, Suite 409, Birmingham, AL 35294; via email: dss@uab.edu; or visit their [website](#) for more information.

If you are registered with Disability Support Services, **it is the student's responsibility to contact the course instructor** to discuss the accommodations that may be necessary in this course. Students with disabilities must be registered with DSS and provide an accommodation request letter before receiving academic adjustments. Reasonable and timely notification of accommodations for the course is encouraged and provided to the course instructor so that the accommodations can be arranged. Additional information about the process is available on the UAB [website](#).

Title IX:

The University of Alabama at Birmingham is committed to providing an environment that is free of bias, discrimination, and harassment. If you have been the victim of Sexual discrimination, harassment, misconduct, or assault we encourage you to report the incident. UAB provides several avenues for reporting. For more information about Title IX, policy, reporting, protections, resources and supports, please visit [UAB's Title IX Policy](#) and [UAB's Equal Opportunity and Anti-Harassment Policy](#).