Carroll University  
EXP 505: Laboratory Methods I  
Fall 2017

Instructor: Jessica M. Brown, PhD  
Office: Charles Street Hall 108  
Email: jmbrown@carrollu.edu

Meeting Location & Time: CGS LL17 & LL02  
T/R 3:00 – 4:50 PM

Credits Hours: 2

Office Hours: M/W 9:00 am – 11:00 am Main Campus – Charles Street Hall 108  
T/R 1:30 pm – 3:00 pm CGS- EXP Office

Co-requisite. EXP 503: Advanced Exercise Physiology

Course Description. Provides students with hands-on experience with techniques and research applications for assessing, evaluating, and interpreting various physiological parameters such as health screenings, body composition, pulmonary function, blood chemistry, submaximal exercise tests, musculoskeletal fitness, range of motion, balance, and functional ability screenings. This course will also include decision-making skills in designing exercise interventions to include instruction, demonstration and supervision of exercises.

Required Resources. Resources will be posted on Canvas. Please purchase a 3-ring binder to store all laboratory materials.

Recommended Textbooks.
ISBN-10: 1496339061

Course Objectives. Upon successful completion of this course, students should be able to:
1. Conduct and interpret common health screenings.
2. Correctly assess risk stratification and identify contraindications to exercise testing
3. Conduct common anthropometric assessments of body composition.
4. Assess and interpret resting variables such as heart rate, blood pressure, spirometry, etc.
5. Calibrate and use common testing apparatus (bicycle ergometer, treadmill, and scale).
6. Conduct a variety of common submaximal tests that estimate aerobic capacity, using tests and exercise modes appropriate for the client.
7. Estimate energy expenditure, workload, and oxygen consumption by mathematical calculation of metabolic prediction equations.
8. Conduct commonly used protocols to assess muscular fitness, including endurance, strength and power.
9. Assess flexibility using a variety of common protocols using a goniometer and sit-and-reach box.
10. Possess knowledge of the fundamental processes of exercise physiology that are applied during health screenings and exercise testing.
11. Demonstrate appropriate decision-making skills to identify exercises to meet client needs and goals, including the ability to properly instruct, demonstrate and modify exercises.
12. Utilize practical skills to investigate hypotheses and research questions.
13. Demonstrate knowledge and competencies fundamental to understanding and communicating advanced physiology concepts and laboratory skills.
14. Identify and access sources of information, including journal articles and library resources. Utilize proper citation methods e.g. APA Guidelines.

**Laboratory Guidelines.** Students should be appropriately dressed for each lab session. A professional atmosphere will be maintained in the lab. The safety, comfort, and privacy of subjects and volunteers is a top priority.

Expectations of students include the following:
- There is absolutely no eating or drinking in the lab areas.
- All students are expected to follow universal precautions in the event of exposure to a bloodborne pathogen.
- Take personal responsibility for the proper care, cleaning, and maintenance of all equipment in the laboratory.
- Do not wear shoes on any equipment that contacts human skin (i.e., tables/plinths, exercise mats, etc.).
- Do not sit, stand, or put your shoes on tables, counters, etc.
- Only use lab equipment for its intended use.
- Immediately report broken equipment to the instructor.
- Return small lab equipment to the counter area, and follow specific instructions for the proper care and cleaning of equipment.
- Return larger lab equipment and furniture to appropriate places after each use.
- Clean sinks and surrounding areas after use.
- Push chairs in at the lab tables and clean table surface at the end of the lab session.
- Please properly dispose of any refuse with you when you leave the lab.
- Dirty towels/linens should be placed in the appropriate container.
- Failure to comply with lab policies will result in the loss of lab privileges.

For safety purposes, hands should be washed (soap and water, or hand sanitizer) prior to and at the completion of laboratory work and before touching each new subject. Students are not to use equipment without prior instruction and supervision of an authorized faculty member.

**Student Assessment & Requirements.** Student performance will be assessed by completion of the following assignments and evaluations.
- **Exams** (25%). There will be 2 written exams each worth 12.5% of your final grade. Exam questions will be a variety of formats (short answer, multiple choice, true/false, etc.).
- **Lab Reports** (45%). There will be 6 written lab reports. Lab reports are due via Canvas prior to the start of lab the day they are due. Lab reports will emphasize your ability to succinctly articulate the methods, appropriately present data, and discuss the interpretation of findings as they relate to exercise physiology in a written format.
  - A rubric is located on Canvas
- **Study Lab Report** (17.5%). This course will culminate with a self-designed study utilizing any methods discussed during previous labs. Students will design a study, collect data on their peers, analyze and interpret the findings, and write a formal Lab Report. The findings will be presented to the class during Finals Week.
• **Participation** (12.5%). Students are expected to both attend and fully participate in each lab. Full participation may include being the subject/volunteer or collecting data. Do not be an idle bystander to the laboratory activities. Participation points will be based on data collection and willingness as a participant.

**Grading**. The table below illustrates the point value for each assignment.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points (%)</th>
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</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>50 (12.5%)</td>
</tr>
<tr>
<td>Exam 2</td>
<td>50 (12.5%)</td>
</tr>
<tr>
<td>6 Lab Reports (30 pts.)</td>
<td>180 (45%)</td>
</tr>
<tr>
<td>Study Lab Report</td>
<td>70 (17.5%)</td>
</tr>
<tr>
<td>Participation</td>
<td>50 (12.5%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>400 (100%)</strong></td>
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</tbody>
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**Grading Scale**. Final grades will be determined by the percentage of total points earned in this course during the semester. Final grades will be rounded to two decimal points and assigned as listed below. This scale is firm.

A: 89.50% – 100.00%
B: 79.50% – 89.49%
C: 69.50% – 79.49%
D: 59.50% – 69.49%
F: 00.00% – 59.49%

**Statement of Right to Modify Course Content**. The instructor and the University reserve the right to modify, amend or change the syllabus (course requirements, grading policy, etc.) as the curriculum and/or program require

**Accommodation of Special Needs**. Students with documented disabilities who need accommodations, or any student considering obtaining documentation should make an appointment with Ms. Martha Bledsoe, Director of Services for Students with Disabilities, no later than the first week of class. She can be reached by calling 262-524-7335 or contacting her via email at mbledsoe@carrollu.edu.

Please let the instructor know if you have a physical limitation to participating in the lab activities. Reasonable accommodations will be made.


I encourage you to familiarize yourself with it. If a student violates this policy in any way, I reserve the right to impose a sanction of failure on the assignment/assessment and/or failure in the course. If you have questions about appropriate citation, when group collaboration is appropriate, or other related issues, please ask.

**Communication Policy**. During the work week, the instructor will respond to course-related emails within 24 hours of receipt.