

## HBIO 491

### Laboratory and Field Experience in Human Biology

Units: 2,3, or 4

Fall 2016

Location: PED B8-10

**Instructor: McNitt-Gray**

**Office:** PED 9

**Office Hours:** Monday 8-9AM

**Contact Info:** mcnitt@usc.edu.

**Teaching Assistant:**

**Office:** Travis Peterson

**Office Hours:** Wed 4-5PM

**Contact Info:** travispe@usc.edu

### Course Description

Practical experience in basic and applied physiology, motor control and/or biomechanics. Emphasis on using quantitative techniques to advance understanding of scientific and engineering principles.

### Objectives: Consistent with the Department of Biological Sciences Learning Objectives

1. Develop critical thinking and problem solving skills
2. Explore interdisciplinary approaches to study human biology
3. Gain hands-on experience quantifying and interpreting human biological data
4. Improve oral, written, and electronic communication & technical presentation skills

**Standard Grading Scale:** >90%=A, > 80%=B, >70%=C, >65%=D, <65% =F

### Grading Breakdown

Assignment	Points	% of Grade
Needs/Stakeholders	10	10
Approach Pros/Cons	10	10
Design- Lab	10	10
Re-design- Lab	10	10
Field Results	20	20
Demonstration	20	20
Report	20	20
<b>TOTAL</b>	<b>100</b>	<b>100</b>

### Assignment Submission Policy

*Weekly progress reports:* submitted to mentor by email that includes lessons learned

*Monthly Milestones:* Preliminary analysis and scientific/engineering approaches used to date ( .ppt)

*Final Project:* Oral presentation, multimedia for interactive learning, and Technical Report

Late assignments receive zero credits.

Students are expected to be certified by for research involving human subjects as specified by the institutional review board (CITI). Students are also expected to learn how to responsibly maintain, calibrate, and use measurement tools necessary for the project.

### Course Schedule:

For each unit of in-class contact time, the university expects two hours of out of class student work per week over a semester. Contact time will occur in form of discussion, seminar, experiences in the laboratory or field, data collection and data analysis. Contact time duration will average 50 minutes per unit. Hours of work, in and out of class, per semester will also be proportional to units (e.g. 2 units: work 6-7 hrs; 3 units: 8-12 hrs; 4 units: 12-16 hrs).

	Topics/Daily Activities	Readings and Homework	Deliverable/ Due Dates
<b>Week 1</b> Dates	Inspiration: Understand the Problem/Goal	Interview End Users, Identify Challenges	Needs, Stakeholders identified
<b>Week 2</b> Dates	Inspiration: Understand the Problem/Goal	Interview End Users, Identify Challenges	Needs, Stakeholders identified
<b>Week 3</b> Dates	Existing approaches: Strengths/weaknesses	Review of Peer Reviewed Literature (Pubmed@usc)	Pros and Cons with References
<b>Week 4</b> Dates	Existing approaches: Strengths/weaknesses	Review of Peer Reviewed Literature (Pubmed@usc)	Pros and Cons with References
<b>Week 5</b> Dates	Develop Approach	Laboratory	
<b>Week 6</b> Dates	Develop Approach	Laboratory	
<b>Week 7</b> Dates	Design, Test, Evaluate	Laboratory	
<b>Week 8</b> Dates	Design, Test, Evaluate	Laboratory	Preliminary Results
<b>Week 9</b> Dates	Re-Design, Test, Evaluate	Laboratory	
<b>Week 10</b> Dates	Re-Design, Test, Evaluate	Laboratory	Secondary Results
<b>Week 11</b> Dates	Re-Design, Test, Evaluate	Field	
<b>Week 12</b> Dates	Re-Design, Test, Evaluate	Field	
<b>Week 13</b> Dates	Reflect	Comparison of Laboratory and Field Results	Field Results
<b>Week 14</b> Dates	Summarize		
<b>Week 15</b> Dates	Demonstration		
<b>FINAL</b> Date	Summary Report		Submitted first Friday of Final Exams

## Statement on Academic Conduct and Support Systems

### Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards*<https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct/>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu/> or to the *Department of Public Safety* <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage [sarc@usc.edu](mailto:sarc@usc.edu) describes reporting options and other resources.

### Support Systems

A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* [http://sait.usc.edu/academicssupport/centerprograms/dsp/home\\_index.html](http://sait.usc.edu/academicssupport/centerprograms/dsp/home_index.html) provides certification

for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.