



Department of Biological
Sciences
Graduate Teaching Assistant
Handbook

Graduate Teaching Assistants (GTAs) are vital members of the Department of Biological Sciences at The University of Alabama. As a GTA, you may have one role or a combination of many different roles, including:

- Assisting a professor with a lecture or mixed lecture/lab course
- Leading laboratory section(s)
- Working at the Biology Help Desk
- Proctoring exams
- Leading field trips

Being a GTA can be one of the most rewarding experiences you have during your time at UA. Stepping into the role of a GTA marks a very important transition in your life. Yes, you are still a student in your field, but you have become enough of an “expert” to start sharing your knowledge and teaching others. Also, if you are thinking about making teaching or research a full-time career, a teaching assistantship will help you determine if that is a good choice for you.

Your GTA experience will help develop important professional skills, regardless of career path. Instructing courses involves communicating to a broad audience, conveying technical or complex materials and public speaking.

The information and resources in this handbook are designed to help you prepare for your role(s) and responsibilities as a GTA in the Department of Biological Sciences at The University of Alabama and hopefully help alleviate some of those fears. To make certain you understand your role as a GTA, confer with your faculty supervisor. It can also be helpful to talk to other GTAs who have been a GTA for the same course.

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Conducting Labs

Labs provide students first-hand experience with course concepts and the opportunity to explore methods used by scientists in their discipline. As a GTA in a lab, you will need to know and review the experiment, plan clear explanations, and create questions to stimulate student thinking. In addition, it is your responsibility to ensure that safety standards are followed.

Preparing to Conduct a Lab

The best way to prepare for labs is to conduct the experiment yourself with the students' lab manual in hand. You will discover whether directions are clear and if students have the skills necessary to complete the experiment. Take notes as you proceed, so you can tell students how long the experiment should take, clarify confusing passages, and demonstrate new or difficult procedures. If you know what problems students are likely to encounter and what questions they may ask, you will be able to make much better use of your time and make the lab more effective for student learning.

You should also know exactly what materials and equipment you will need. Familiarize yourself with the hazards and clean up procedures of chemicals before you use them in the laboratory.

Allow more time to prepare when prepping a new course. As the semester progresses, you will likely become more efficient and therefore will spend less time preparing. Much of this will be covered during laboratory prep meetings each week.

Supervising the Experiment

At the beginning of the lab, review the purposes and procedures of the experiment. Even if labs are designed primarily for independent student work, most students will appreciate a brief overview at the beginning of the period. You might deliver a brief lecture on how the experiment relates to recent class lectures and/or to current issues in the discipline, or you might briefly discuss any other assignment you have given the students in order to prepare them for working through this experiment. This will vary from course to course, so check with the lab supervisor or professor to get a clear idea of what your expectations are as far as lecturing goes.

Demonstrate special procedures at the beginning of lab, clarify any ambiguities in the lab manual, and then ask if anyone has any questions before starting the lab exercise.

If both you and your students are well prepared, you will be free to walk around the room and monitor students' progress as they do the experiment. Try to talk with each student at least once during the experiment. Technical and procedural matters can be handled quickly with a few words of advice. Ask questions to help students master the steps of scientific inquiry: recognizing and stating a problem in order to explore it; collecting data; forming and testing a hypothesis; and drawing a conclusion. It is best to refrain from giving outright answers or advice, as students will learn more if you challenge them to figure out the answers on their own. Some

students become frustrated when experiments don't work and therefore this is a good time to remind them that part of experimentation and science as a whole is a process of failure and troubleshooting.

Courtesy is also important in the lab; be sure the workspace is clean and ready for the next users before you leave the lab session! Depending on the course and number of students, it might be helpful to have students check out with you before they can leave. You can print a spreadsheet roster and after you check that a student properly cleaned their work area (e.g., closed lids on stains, turned off gas, emptied waste container), check their name off and use it as your attendance sheet; therefore, if a student leaves without checking out with you, they are marked absent. Expectations for clean-up are different for each lab course. Check with your lab supervisor or professor to clarify clean up expectations and that all waste is disposed of properly.

Safety Procedures

Safety is an important issue when you are directly responsible for the health and well-being of up to 36 laboratory students. Dramatic incidents are rare, but small accidents often occur. The professor or lab coordinator for the course establishes safety procedures following University rules. It is your responsibility to ensure policies are understood and followed (See Appendix 4).

You should demonstrate the proper techniques for waste disposal, transferring or measuring liquids, aseptic technique, organizing a work area, using burners and equipment such as gloves, goggles, lab coats, etc. Repeatedly remind students of safety techniques during the semester.

Note that safety requirements apply to you, as well as the students. You must follow attire and food & drink policies, etc. Failure to follow or enforce safety rules will result in disciplinary action. See Course-Specific Materials and Appendix 4 for detailed safety documentation.

Office Hours

Office hours give students the opportunity to ask in-depth questions and to explore points of confusion or interest that cannot be fully addressed in class. It is important for GTAs to encourage their students to come to office hours and to use that time effectively. It is usually more effective in office hours to help students learn by leading them to conclusions through careful questioning rather than simply giving them an explanation.

If a student is absent and wants to discuss material he/she missed while out, you should communicate ahead of time that the student is expected to review missed materials prior to coming to office hours. It is not your responsibility to repeat lectures.

Commitment

It is typical for GTAs to offer at least two office hours per week, usually held in their on-campus office, in which you will be available to review/discuss material, exams, and grades. This time could also be used to do make-ups for those students who missed class and have provided a written excuse from an authorized individual justifying their absence. Explain to your students that these are “walk in” office hours so they can arrive at any time throughout the scheduled hour.

Your office hours will be more productive if you schedule them at times when students are likely to be free. Notify students in class and post the hours on the Blackboard homepage for your course. Additionally, office hours will not always be ideal for every student, and making individual appointments may be necessary, but this is up to your discretion. Remember that scheduling office hours also entails a commitment on your part to keep them.

Communicating with Students

- **Introductory Information Email:** (sent through Blackboard the week before labs start - and send another reminder during the first week of labs!)
 - An introductory email should be sent to student users at least three days before the first laboratory meeting including the time and date of the first lab, the room number, and a refresher on lab attire. The email is also recommended to include instructions to prepare for the first lab such as reading material and items that should be brought to class. See **Appendix 1** for a sample introductory email.
- If possible, try to learn the names of your students. This creates a more comfortable environment for instructor/students throughout the semester.
- Be friendly but maintain boundaries: You may be close in age to many of your students and have similar likes and dislikes. No matter what your GTA duties are, you still hold a position of authority. Don't allow yourself to be thought of as a friend (e.g., if you're invited to dinner, parties, or other social events, politely decline). Never consider romantic relationships with your students.
- **Electronic Communications:** GTAs should respond to emails from students within 24 hours during the week (or on Monday for weekend emails). Maintain professionalism in all electronic communication. Your specific email preferences should be conveyed to students during your first interaction. These preferences may include salutation, introduction, body, closing, and subject. For example, requiring students to put their name, course, and section number in the subject line will give you background to answer students' questions. Emails are records of your communications with students. Treat emails as public because should there be a complaint they will be viewed. Always email from your official university email address and require your students to do so as well.

- **Privacy:** In accordance with federal law, students have the right to certain standards of privacy in regard to their grades and other educational records. Do not communicate grades via email.

Grading

- GTAs are expected to have each assignment graded within two weeks.
- Instructors are required to submit midterm grades (entered into myBama) for all 100- and 200-level courses. Grades assigned for non-attendance should be assigned at Midterm.
- Final grades are required for all courses and must be entered into myBama typically by 11:59pm on the Tuesday following final exam week (see academic calendar for exact date/time). If a student receives a grade of "F" you must report why they received this grade. This is why taking attendance is important.
- For additional information on non-attendance grading and other grading policies, definitions, and terminology visit Grade Reporting.
- See the University Registrar's Academic Calendar for due dates for entering midterm and final course grades and deadline for students to Drop a Course with a Grade of "W".
- Unless approved by the lab coordinator or professor you are assisting, you are not allowed to provide extra credit.
- **Tips for Grading:**
 - Be consistent from start to finish, especially with any assignments that do not have a concrete rubric.
 - Always be able to justify the grades that are given.
 - If possible, grade assignments without looking at the students' names so as to avoid potential bias while assigning a score.
 - It is recommended that you grade each assignment in one sitting, if possible. You'd be surprised how much your grading might fluctuate on the same assignment if you grade it at different times. This will also help you remember when several students make the same mistake so you can discuss the misunderstanding during class.

Lab Attendance

Lab periods are either taken for credit independent of a lecture course or taken concurrently with a lecture portion. In both cases lab attendance is required of each student. Attendance should be taken by the GTA during each lab section and the GTA is responsible for keeping track of attendance throughout the semester. Lab participation and attendance will vary in weight for final grade calculation based on each individual course decided by the lab coordinator or professor. Attendance records (for example a sign in sheet, daily questions, etc.) should be kept by the GTA throughout the semester in case disputes about attendance arise.

Office of Disability Services

The Office of Disability Services (ODS) is the central campus resource for students who wish to request academic accommodations. In collaboration with students and instructors, ODS coordinates accommodations and support to ensure equal access to an education. ODS now utilizes a portal system for accommodation information. Further information is available at <http://ods.ua.edu/>, including tips for providing accommodations. You may need to:

- Meet with students privately during office hours or by appointment to discuss how each accommodation will be provided in the course.
- Arrange note takers on behalf of the student and/or allow audio recording of lectures or use of technology for note-taking (use of Panopto is also recommended, if appropriate).
- Develop a plan for providing testing accommodations.
- If you instruct students to schedule their tests at the ODS Testing Center, a plan should be in place for providing testing accommodations in the event that the ODS Testing Center is booked to capacity.
- Complete the Attendance Modification Agreement with the student, thinking through how attendance modifications and make-up work can be offered.
- Contact ODS with any questions or concerns regarding accommodations.
- Maintain the student's confidentiality. Only share information about a student's use of accommodations on a need-to-know basis.

Accidents and Injuries (also see Appendix 4)

Medical Emergencies:

1. Contact UAPD (205-348-5454) and report the location and nature of the emergency.
 - UAPD will summon emergency medical personnel if required.
2. Inform the Laboratory Coordinator or the duly designated representative.
3. Do not attempt to render medical assistance unless you are a licensed/certified emergency care provider, and do not leave the patient unattended until told to do so – non-licensed/non-certified persons are not protected under the “Good Samaritan Act” in the state of Alabama.

Non-Medical Emergencies:

1. An “On the Job Injury (OIJ)” report must be completed for all injuries, regardless of the severity of the injury.
2. All accidents and injuries, regardless of severity, must immediately be reported to the instructor and the Laboratory Coordinator.
3. All students suffering injury while participating in the laboratory course must report to the Student Health Center (during normal business hours), or to the DCH Emergency Department (after hours) with the OIJ form.
4. The injured student must return the OIJ form to the Laboratory Coordinator for submission to EHS.

Reporting Emergency Situations

The safety and well-being of our students is our highest priority at The University of Alabama. Please take a few minutes to read “[What to do in an Emergency](#)” to learn about the protocols you must follow to ensure your students and yourself are safe in the event that a [Tornado Watch or Warning](#), [Fire or Explosion](#), and/or [Active Shooter](#) occurs on campus.

Emergency situations, or situations where there is an imminent risk of harm to anyone, should be immediately reported to the University of Alabama Police Department (UAPD). UAPD may be reached as follows:

- 911 or 8-5454 from any UA phone
- 205-348-5454 from a non-UA phone

Examples of emergency situations include, but are not limited to, the following:

- Possession of weapons (guns, knives, etc.) on campus
- Possession of bombs or bomb-making materials on campus
- Physical assault or attempted physical assault, with or without weapons, on campus
- Explicit threats to inflict physical harm to one’s self or others

Reporting Non-Emergency Situations

We all can play a part in promoting the safety and well-being of our community. One way that you can help is to be aware of individuals in distress and refer them to appropriate resources. If you are concerned for someone or feel they may pose a risk to themselves or others, please share the information using the [student referral reporting form](#). Student Care and Well-Being (SCWB) staff will assess the urgency of the reported information and provide case management and/or referral to address the concern.

Examples of behavior falling under the *reporting responsibility* for non-emergency situations include, but are not limited to, the following:

Behavioral Signs

- Stalking, harassing, and/or physically intimidating behavior towards others
- Signs of substance abuse (decline in personal hygiene, mood swings, tardiness, etc.)
- Hyperactivity or rapid speech
- Difficulty concentrating
- Inappropriate fascination with guns or weaponry
- Unwarranted aggressive/irrational behavior through words and/or actions, fits of rage, etc.
- Significantly notable depression, unhappiness, or irregular emotional behavior
- Anger management problems, impulsivity, confrontational or disturbing words and actions
- Expression of suicidal ideations, feelings, or acts that may or may not involve others

- Threatening communications (statements, displays, photos, etc.) in any format
- Intentional damage to UA property

Academic Signs

- Disruptive behavior in the classroom
- Uncharacteristically poor academic performance
- Excessive absences
- Frequent sleeping in class

Other Useful Websites

UA Academic Calendar: registrar.ua.edu/academiccalendar/

Graduate Student Employment Policy: services.graduate.ua.edu/publications/ga/gaguide.htm

Confidential Student Records (FERPA): registrar.ua.edu/academics-policies/ferpa/

GTA Assignments, Support, and Time Commitments

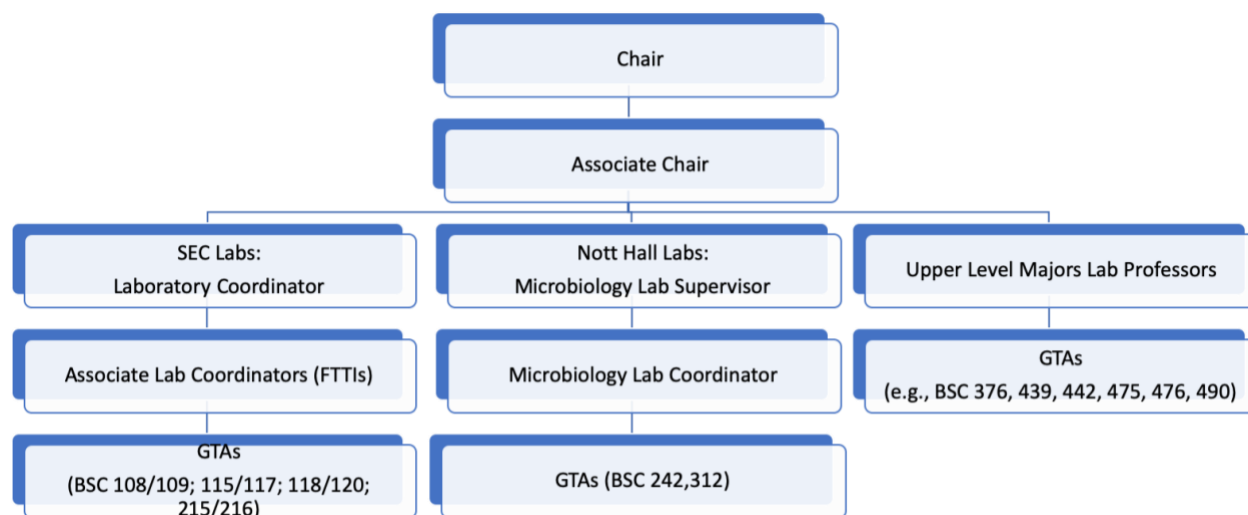
A full-time 12-month GTA position requires teaching activities during both fall and spring semesters and during the summer, for a total of no more than 20 hours per week (or an average of 20 hours per week during the summer, depending on the nature of the teaching assignment). Estimated time commitments are provided in the Course-Specific Materials section below, however, these breakdowns are only approximate, and final determination of 20 hour per week assignments are at the discretion of the GTA Committee, the Associate Chair, and the Department Chair. In some cases, a standard lab teaching assignment may not fulfill the ~20 hours per week load, so TAs may be assigned as a Biology Core Lecture GTA, Help Desk GTA (**Appendix 2**), or given another course-related assignment to make up a full teaching load.

The GTA Committee will work to assign responsibilities such that each student has a balanced workload of ~20 hours per week.

Students supported as a GTA may also elect to receive a 9-month GTA position from the Department (teaching only during FA/SP semesters) if they do not wish to teach over the summer. In these instances, summer support could be provided in the form of a GRA from the advisor or other funding sources. Students and PIs should attempt to determine whether students will require 9-month or 12-month support from the department prior to signing MOAs at the start of the academic year (or at the time of appointment for students admitted in the spring semester). While scenarios may emerge where a student may no longer need a GTA (e.g., if the PI obtains funding to pay summer salary as a GRA), students cannot drop to a 9-month appointment after a 12-month appointment is signed without alternative support.

GTA Absences: In the event that a GTA cannot teach a section, the GTA should speak to the lab coordinator or professor in charge of the lab period. The GTA should also first reach out to other GTA's to see if someone is able to cover their lab period, and communicate the change to the lab coordinator or professor.

GTA Oversight, Performance Evaluation, and Corrective Action



Oversight structure for laboratories, GTA evaluation, and reporting

Direct oversight of GTAs in most labs will generally be the responsibility of Associate Laboratory Coordinators. Overall supervision of the SEC labs is the responsibility of the Laboratory Coordinator. Supervision of GTAs in upper-level classes 300/400 level classes (besides BSC 312) will generally be the responsibility of the Course Professor.

To ensure the quality of education in laboratory classes, compliance with appropriate safety procedures, and adherence to pedagogical standards and grading schedules, each GTA will be observed at a minimum of 4 unannounced occasions throughout the semester by the relevant supervisor (Associate Lab Coordinator, Course Professor, etc.), using a performance evaluation rubric similar to that found in **Appendix 5**, with a longer more thorough evaluation conducted once per year for each course taught (**Appendix 5**). Grade recording and reporting will also be monitored during the semester. Observation frequency may be increased at the discretion of the Associate Lab Coordinator, Lab Coordinator, or Associate Dept. Chair based on results of performance evaluations or factors like student complaints and prior SOI scores. All performance evaluations or other issues detected by direct supervisors will be copied to a) the GTA, b) Lab Coordinator (if relevant) and c) Associate Department Chair and maintained in Department records.

In most cases, GTAs are excellent at their jobs, but on occasion poor performance or other issues may be reported. Based on the results of performance evaluations, different forms of disciplinary action may be taken. In most instances a “three-strikes you’re out” policy will be employed. In most instances a first violation will result in a discussion with the Laboratory Coordinator and/or Associate Lab Coordinator about correcting the issue, with a record placed in the students’ file. A second violation will result in a similar discussion with the coordinators and the Associate Chair about corrective actions, but will also involve disciplinary action that includes notification of the student’s PI and ineligibility to receive future departmental support such as travel or research funds, departmental awards, etc. A third violation will generally result in ineligibility for future GTA support. Egregious violations that relate to safety, attendance, grading or inappropriate interactions with students may result in more immediate action, at the discretion of

the Associate Chair, Graduate Director, and/or Department Chair. These actions can include immediate removal from teaching responsibilities and ineligibility for future GTA assignments or other departmental financial support.

In addition to providing a mechanism for ensuring education quality, GTA evaluations will also have a positive benefit for excellent teachers: the department's awards committee will use evaluations in conjunction with SOIs and other materials as a metric to determine recipients of departmental GTA awards.

Course-Specific Materials

This section contains our best efforts at collecting the information and advice needed to assist you with your GTA duties in the specific course(s) you will be teaching. You will undoubtedly encounter a scenario or have a question that is not addressed below and we encourage you to reach out to the lecture professor or lab coordinator, fellow GTAs, or your graduate advisor for assistance.

Introductory Biology I for Non-Majors Laboratory - BSC 108

Course Description: BSC 108 is a core natural science elective for non-majors. The BSC 108 laboratory component is designed to provide students an opportunity to investigate basic biological processes, and the principles that govern them through computer simulations, internet resources and in-class collaborative activities.

Course Duration: 50 minutes; 1 day a week

Course Contact Information:

- Important Contacts:
 - Todd Casanova (Lab Coordinator):
 - Office: 2421 SEC
 - Phone
 - Office: 205-348-1802
 - Mobile: 225-252-1739
 - Email: tbcasanova@ua.edu

Blackboard Learn (BBL):

- Once you are assigned a specific section, you should have access to that course on BBL. Make sure to post your contact information in the “Information” folder in the same format used by Dr. Casanova.
- You should set up your BBL assignments before the course begins, so you don’t have to worry about this throughout the semester! This means setting date and time limits for associated assignments and making sure materials will be available to the students.
 - Students should receive 1 week to complete their pre-lab quiz.
 - This must be completed *before* class. Although, unlike Chemistry, if the student doesn’t complete their pre-lab quiz, they can still attend the laboratory they will just receive a “0” for the quiz.
 - Students should receive 1 week to complete their post-lab assessment.

- This must be completed before the following class. If a student has an *unexcused* absence, they will receive a “0” on the post-lab assessment for the class that they missed. If they submit an assessment anyways you will need to change the grade to a zero on BBL.
- Tests are administered during class time through BBL. Laptops are required. Student may have a calculator to assist them (not a phone). Around a week prior to the exam send out a study guide (you may use a version from prior semesters or create your own). Study guides should not provide answers to exam questions but direct the students toward the topics which must be understood in order to do well on the exam.
 - Handle any ODS accommodations accordingly.
 - Alter time limits on BBL in accordance with the requested accommodations.
 - If accommodations include a distraction-free testing environment, the student is responsible for securing a spot at the ODS testing center for the date of the test. However, if the student was unable to secure a spot at the testing center, work with them. It may be best to set an alternative date/time to take the exam in a quiet space such as your office.
 - Direct any questions regarding accommodations to the Office of Disability Services at (205) 348-4285.

Lab Safety: Food and drink are never allowed in the laboratory. All student bags should be placed under the table for their and your safety. If bags become a problem, storing them in the blue bin may be necessary. Students are responsible for maintaining a clean and organized lab bench at all times.

Lab Preparations:

- **Before Lab:** As an instructor, you should arrive at least 10 minutes early to your classroom. Upon arrival, make sure there are enough functional laptops for all students and that the online virtual lab resources are working properly, if not, contact the lab coordinator. Set up your PowerPoint presentation and associated materials before the students come in, so you are prepared to start once the start time has begun.
- **During class:** Take attendance. You must have a method prepared to take attendance such as sign in sheet, roll call, or electronic check in. All lab activities for this course are digital, ensure students are completing the activities on their own.
- **After class:** Make sure lab stations are tidy. Turn off laptops and put them away.

Lecture Materials: Skeleton PowerPoints will be provided by the lead GTA or the lab coordinator. The PowerPoint may be amended as needed to provide the best education to the students. You may add additional slides that help students wrap around difficult content,

assignments, or real world examples. You are encouraged to make presentations your own as long as you assure all material is covered.

- **See Box folder** for previously used materials provided by veteran GTAs.

Teaching Tips:

- Make sure you are prepared for lab. If needed, reread your lab material or go over your lecture to ensure you can confidently present the information and explain the procedures. Preparation ensures the lab will go smoothly and be beneficial to the students.
 - It is also useful to look through post-lab assessment questions to see what students are expected to learn from your presentation and the lab activity.
- If possible, it is beneficial to shadow an earlier lab section to ensure that you understand what material should be covered and how lab activities should be completed.
- Optional: Four weeks into the semester instruct students to write anonymously on a sheet of paper, an aspect of the class they would like for you to keep doing, stop doing, and change. Remind students of what you have authority over such as additional lecture content, supplementary materials, the way you explain procedure, etcetera, while you remind them of the aspects you cannot change such as quizzes, tests, time limits. The exercise allows you to see where you may improve while giving the students a sense of input in their section.

Maintenance: All equipment for student use should be turned off. Finally, upon leaving the lab the projector should be powered off, but the laptop should be closed and left on.

Grading:

- **Uploading grades to BBL:** Most assignments (such as quizzes) are graded automatically by BBL. Additionally, some post-lab assessments are graded by BBL, but some require you as an instructor to grade short answer questions. Once you hit submit at the bottom of BBL, the grade should be automatically submitted.
 - Assignments should be graded within 2 (two) weeks after their due date, but preferably within 1 (one).
 - If a student has an issue with the grade that they received on an assignment, they must contact you within 1 (one) week of the grade being submitted. Anything more than 1 week is a final grade.
- **Agreements Checklist:** Assignment 1 is an Agreements Checklist form that students must download, fill out, and reupload by the 3rd week of class. While the assignment provides extra credit points, it is **not** optional. It must be completed, or the student will be dismissed from the lab.
- **Attendance:** Attendance is mandatory. If a student is absent, they may not complete the post-lab assessment for the class that they missed. If they submit an assessment anyways you will need to change the grade to a zero on BBL. Additionally, if a student receives four unexcused absences during the semester, they will automatically receive a grade of

zero for the course. Keep good records of attendance in case this occurs. It is courteous to reach out to students nearing the absence limit and inform them of their status but you are not obligated to do so.

- **Midterm grades:** Midterm grades submission occurs approximately 7 weeks into the semester. A formal submission is *not* required for this course but assignments prior to the midterm grade submission deadline must be graded on BBL, as this is one of the last opportunities for a student to drop the course with a grade of “W”.
- **Final grades:** Final grades do *not* need to be uploaded but you must notify the lab coordinator when your grades are finalized on BBL. This means, that your gradebook must be up-to-date approximately 1 week before final grades are due for submission.
 - See the [University Registrar’s Academic Calendar](#) for specific due dates for entering midterm and final course grades and deadline for students to Drop a Course with a Grade of "W".

Introductory Biology II for Non-Majors Laboratory - BSC 109

Course Description: BSC 109 is a core natural science elective for non-biology majors. The BSC 109 laboratory component is structured to introduce students to the science of biology, by emphasizing normal organ system function, organ system pathology, and healthy life style choices. Students will engage in laboratory activities that promote collaboration, the scientific method and critical-thinking skills.

Course Duration: 1 hour 50 minutes; 1 day a week

Course Contact Information:

- Important Contacts:
 - Todd Casanova (Lab Coordinator):
 - Office: 2421 SEC
 - Phone
 - Office: 205-348-1802
 - Mobile: 225-252-1739
 - Email: tbcasanova@ua.edu

Blackboard Learn (BBL):

- Once you are assigned a specific section, you should have access to that course on BBL. Make sure to post your contact information in the “Information” folder in the same format used by Dr. Casanova.

- You should set up your BBL assignments before the course begins, so you don't have to worry about this throughout the semester! This means setting date and time limits for associated assignments and making sure materials will be available to the students.
 - Students should receive 1 week to complete their pre-lab quiz.
 - This must be completed *before* class. Although, unlike Chemistry, if the student doesn't complete their pre-lab quiz, they can still attend the laboratory they will just receive a "0" for the quiz.
 - Students should receive 1 week to complete their post-lab assessment.
 - This must be completed before the following class. If a student has an *unexcused* absence, they will receive a "0" on the post-lab assessment for the class that they missed. If they submit an assessment anyways you will need to change the grade to a zero on BBL.
 - Tests are administered during class time through BBL. Laptops are required. Student may have a calculator to assist them (not a phone). Around a week prior to the exam send out a study guide (you may use a version from prior semesters or create your own). Study guides should not provide answers to exam questions but direct the students toward the topics which must be understood in order to do well on the exam.
 - Handle any ODS accommodations accordingly.
 - Alter time limits on BBL in accordance with the requested accommodations.
 - If accommodations include a distraction-free testing environment, the student is responsible for securing a spot at the ODS testing center for the date of the test. However, if the student was unable to secure a spot at the testing center, work with them. It may be best to set an alternative date/time to take the exam in a quiet space such as your office.
 - Direct any questions regarding accommodations to the Office of Disability Services at (205) 348-4285.

Lab Safety: Laboratory attire should be worn at all times including long pants, shirts with sleeves, and closed toed shoes. Food and drink are never allowed in the laboratory. All student bags should be placed under the table for their and your safety. If bags become a problem, storing them in the blue bin may be necessary. Gloves are always necessary when dealing with chemicals. All live or previously live tissues or cells to be discarded should be done so in the biohazard container. Tables should be disinfected before and after each lab. Students are responsible for maintaining a clean and organized lab bench at all times.

Lab Preparations:

- **Before Lab:** As an instructor, you should arrive at least 15 minutes early to your classroom. Upon arrival, make sure you have all reagents and materials that are needed for lab and that they are adequately filled. If you do not have something that you are supposed to, or you do not believe there is enough for your lab section, notify either the prep staff on duty or the lab coordinator. Set up your PowerPoint presentation and associated materials before the students come in, so you are prepared to start once the start time has begun. Review the pre-lab quiz pools and post-lab tests, and correct any errors that may be present before the students see the assignments.
- **During class:** Immediately take attendance. You must have a method prepared to take attendance such as sign in sheet, roll call, or electronic check in. Pay attention to the materials that are being used during lab. If something runs out, there should be refill containers in the back of the room, for you to restock your solution. *Do not* let the students refill their stock solution bottles, this must be done by the instructor!
- **After class:** Identify any materials that were used up during your section and write them down on a sheet of paper. Make sure lab stations were cleaned by your students; if they weren't, you must clean them! Once your lab is "cleared" to go, bring the paper to the prep staff or lab coordinator, so the next lab can be prepared.

Lecture Materials: Skeleton PowerPoints will be provided by the lead GTA or the lab coordinator. The PowerPoint may be amended as needed to provide the best education to the students. You may add additional slides that help students wrap around difficult content, assignments, or real world examples. You are encouraged to make presentations your own as long as you assure all material is covered.

- **See Box folder** for previously used materials provided by veteran GTAs.

Teaching Tips:

- Make sure you are prepared for lab. If needed, reread your lab material or go over your lecture to ensure you can confidently present the information and explain the procedures. Preparation ensures the lab will go smoothly and be beneficial to the students.
 - It is also useful to look through post-lab assessment questions to see what students are expected to learn from your presentation and the lab activity.
- If possible, it is beneficial to shadow an earlier lab section to ensure that you understand what material should be covered and how lab activities should be completed.
- Optional: Four weeks into the semester instruct students to write anonymously on a sheet of paper an aspect of the class they would like for you to keep doing, stop doing, and change. Remind students of what you have authority over such as additional lecture content, supplementary materials, the way you explain procedure, etcetera, while you remind them of the aspects you cannot change such as quizzes, tests, time limits. The exercise allows you to see where you may improve while giving the students a sense of input in their section.

Cleaning:

- **Maintenance:** All center trash receptacles should be emptied at the end of each lab period. All equipment for student use should be turned off. Finally, upon leaving the lab the projector should be powered off, but the laptop should be closed and left on.
- If you are the last lab of the day, make sure all microscopes, sensors, etc. are turned off.

Grading:

- **Uploading grades to BBL:** Most assignments (such as quizzes) are graded automatically by BBL. Additionally, some post-lab assessments are graded by BBL, but some require you as an instructor to grade short answer questions. Once you hit submit at the bottom of BBL, the grade should be automatically submitted.
 - Assignments should be graded within 2 (two) weeks after their due date, but preferably within 1 (one).
 - If a student has an issue with the grade that they received on an assignment, they must contact you within 1 (one) week of the grade being submitted. Anything more than 1 week is a final grade.
- **Agreements Checklist:** Assignment 1 is an Agreements Checklist form that students must download, fill out, and reupload by the 3rd week of class. While the assignment provides extra credit points, it is **not** optional. It must be completed, or the student will be dismissed from the lab.
- **Attendance:** Attendance is mandatory. If a student is absent, they may not complete the post-lab assessment for the class that they missed. If they submit an assessment anyways you will need to change the grade to a zero on BBL. Additionally, if a student receives four unexcused absences during the semester, they will automatically receive a grade of zero for the course. Keep good records of attendance in case this occurs. It is courteous to reach out to students nearing the absence limit and inform them of their status but you are not obligated to do so.
- **Midterm grades:** Midterm grades submission occurs approximately 7 weeks into the semester. A formal submission is *not* required for this course but assignments prior to the midterm grade submission deadline must be graded on BBL, as this is one of the last opportunities for a student to drop the course with a grade of "W".
- **Final grades:** Final grades do *not* need to be uploaded but you must notify the lab coordinator when your grades are finalized on BBL. This means, that your gradebook must be up-to-date approximately 1 week before final grades are due for submission.
 - See the [University Registrar's Academic Calendar](#) for specific due dates for entering midterm and final course grades and deadline for students to Drop a Course with a Grade of "W".

Laboratory Biology I & II - BSC 115/118 & 117/120

Course Descriptions:

BSC 115/118 is a laboratory course that focuses on the development of competency with basic laboratory equipment, methods, techniques, and analyses. The course employs inquiry-based experimentation to investigate fundamental cellular-level processes, while promoting careful observation, analysis of biological problems, and an understanding of biological principles.

BSC 117/120 is a laboratory course that explores diverse life forms through experimentation and promotes the scientific process through inquiry-based investigation of organism structure and function, while promoting careful observation, analysis of biological problems, and an understanding of biological principles.

Course Duration: 2 hours 50 minutes; 1 day a week

Course Contact Information:

- Todd Casanova (Lab Coordinator):
 - Office: 2421 SEC
 - Phone
 - Office: 205-348-1802
 - Mobile: 225-252-1739
 - Email: tbcasanova@ua.edu

Blackboard Learn (BBL):

- Once you are assigned a specific section, you should have access to that course on BBL. You should set up your BBL assignments before the course begins, so you don't have to worry about this throughout the semester! This means setting time limits for associated materials and making sure materials will be available to the students.
 - Students should receive 1 week to complete their pre lab quiz.
 - This must be completed before class. Although, unlike Chemistry, if the student doesn't complete their pre-lab quiz, they can still attend the laboratory they will just receive a "0" for the quiz.
 - Students should be granted 1 week to complete each post-lab Assessment.
 - This must be completed before the following class. If the student was absent for the laboratory activity, they will receive a "0" for that post-lab assessment unless a legitimate excuse is provided.
 - Students should be granted 1 week to complete their Data Analysis Report (DAR).

Lab Safety:

- Laboratory attire should be worn at all times including long pants, shirts with sleeves, and closed toed shoes.
- Food and drink are never allowed in the laboratory.
- All student bags should be placed *under* the bench for their and your safety. If bags become a problem, storing them in the blue bin may be necessary.
- Gloves are always necessary when dealing with live cultures, chemicals, or completing dissections.
- All live or previously live tissues or cells to be discarded should be done so in the biohazard container.
- All dissection razors should be discarded in the biohazard sharps container. Tables should be disinfected *before and after* each lab.
- Students are responsible for maintaining a clean and organized lab bench at all times.

Lab Materials:

- **Before Lab:** As an instructor, you should arrive at least 10 minutes early to your classroom. Upon arrival, make sure you have all reagents and materials that are needed for lab and that they are adequately filled. If you do not have something that you are supposed to, or you do not believe there is enough for your lab section, notify either the prep staff on duty or the lab coordinator. Set up your PowerPoint presentation and associated materials before the students come in, so you are prepared to start once the start time has begun. Review the pre-lab quiz pools and post-lab tests, and correct any errors that may be present *before* the students see the assignments.
- **During class:** Immediately take attendance. You must have a method prepared to take attendance such as sign in sheet, roll call, or electronic check in. Pay attention to the materials that are being used during lab. If something runs out, there should be refill containers in the back of the room for you to restock your solution. ***Do NOT*** let students refill their stock solution bottles, this must be done by the instructor!
- **After class:** Identify any materials that were used up during your section and write them down on a sheet of paper. Make sure lab stations were cleaned by your students; if they weren't, you must clean them! Once your lab is "cleared" to go, bring the paper to the prep staff or lab coordinator, so the next lab can be prepared.

Lecture Materials:

- Skeleton PowerPoints will be provided by the lead GTA or the lab coordinator. The PowerPoint may be amended as needed to provide the best education to the students. You may add additional slides that help students wrap around difficult content, assignments, or real world examples. You are encouraged to make presentations your own as long as you assure all material is covered.

- **See Box folder** for previously used materials that were provided by veteran GTAs.
- Students are often confused about where to locate each assignment and when they are due. You might consider adding something similar to the screenshot below into your PowerPoint presentation each week to help cut down on a lot of confusion and save you from needing to respond to several confused emails.

ACTION ITEMS DUE BEFORE NEXT LAB (10/9)

1. Complete Assessment 7
2. Complete DAR 7 – Exp. 7.5 ONLY
3. Read Chapter 8 in Lab Manual
 - ❖ Review the “Lab Manual: Enzymes Figures” PPT on BBL **before** you take your quiz.
4. Complete Quiz 8

Office Hours
Tuesdays
3p – 4:30p (SEC 2316)
8p – 8:30p (SEC 2429)

Tips for Teaching:

- The majority of the students attending this class have never used a microscope before and from this, comes the biggest struggle for them. Help them try to understand what might be the problem they are having but without solving the problem for them, and guide them through the process to make them more confident and independent. Unfortunately, very often the problem is associated with the microscope itself. Consider showing in class and/or posting to Blackboard the following two YouTube videos:
 - [How to Use and Care for a Microscope \(& Oil Immersion\)](#)
 - [Microscope for Beginners - Questions and Answers](#)
- Demo slides and expected outcomes of experiments (e.g., serial dilution tubes with varying colors) are often provided. Students may want to take pictures for their own reference. In some cases, the GTA may want to perform the experiment as an in-class demonstration. This is often useful for helping students know where things are, and how to properly carry out procedures. As with lectures, be assertive and have all students pay attention to demonstrations, as some may be tempted to begin performing the activities while other students are listening, hence disrupting the lesson.
- Make sure you are prepared for lab. If needed reread your lab material or go over your lecture to ensure you can confidently give your lecture and explain the procedure. The preparation ensures the lab will go smoothly and be beneficial to the students.

- It is also useful to look through post-lab assessment questions to see what students are expected to learn from your presentation and the lab activity.
- Optional: Four weeks into the semester instruct students to write anonymously on a sheet of paper: an aspect of the class they would like for you to keep doing, stop doing, and change. Remind students of what you have authority over such as additional lecture content, supplementary materials, the way you explain procedures, etcetera, while you remind them of the aspects you cannot change such as quizzes, assessments, time limits, or DAR requirements. This exercise allows you to see where you may improve while giving the students a sense of input in their section.

End of Lab Procedures:

At the end of each lab period, students are required to...

- return all supplies to correct location
- dispose of laboratory waste in the appropriate receptacle.
 - Regular laboratory waste is placed in the garbage can.
 - Biological waste (animal tissue, animal carcasses, etc) is placed in the biohazard container (red can with red bag).
 - Microorganism cultures are placed in autoclave bags (clear).
 - Unwanted chemicals are placed in the “Unwanted Chemicals” container (white bucket). Do NOT utilize sinks for chemical disposal.
 - Sharps (razors, scalpels, needles, etc) are placed in sharps containers (brown boxes).
 - Broken glass is placed in a puncture resistant container (white cardboard box).
 - Other waste is disposed of as directed by the instructor.
- empty all benchtop trash receptacles
- organize and disinfect lab benches
- turn off equipment unless the procedure states otherwise (e.g., microscopes should be turned off; spectrophotometers and water baths should be left on)
 - The water bath should be left on until the last lab of the day for procedures in which incubation in a water bath is required. However, the instructor should check that the water level hasn't gotten too low.

At the end of each lab period, instructors should...

- double check that students did all of the above
- power off the projector
- close the laptop but don't turn it off
- The water bath should be left on until the last lab of the day for procedures in which incubation in a water bath is required. However, the instructor should check that the water level hasn't gotten too low prior to leaving the lab.
- If you are the last lab of the day, make sure all water baths, hot plates, etc. are turned off.

Grading:

- **Uploading grades to Blackboard Learn (BBL):** Some assignments (such as quizzes) are graded automatically by BBL. Additionally, some post-lab assessments are graded by BBL, but a majority require you as an instructor to grade several questions. All Data Analysis Reports (DARs) require grading by the instructor. Once you hit submit at the bottom of BBL, the grade should be automatically submitted.
 - Assignments should be graded within 2 (two) weeks after their due date, but preferably within 1 (one).
 - DAR grades should be explained in the feedback section of the grade to allow students to correct their mistakes for future work. It might be helpful to create a feedback template based on the DAR rubric so you can copy/paste the majority of your feedback to save time.
 - Make sure the students understand how to see this feedback. Also, make sure that you have clicked the correct item to make the feedback visible to students.
 - It is suggested that common mistakes also be addressed during your next lab to reduce the recurrence.
 - If a student has an issue with the grade that they received on an assignment, they must contact you within 1 (one) week of the grade being submitted. Anything more than 1 week is a final grade.
- **Midterm grades:** Midterm grades are required to be entered into mybama from BBL for BSC-115. For BSC-118, Dr. Casanova will download your BBL gradebook and submit midterm grades to the lecture professor for you. If uploading midterm grades to mybama (BSC-115), this must be done by the midterm grade deadline (see “Grading” section in handbook introductory section above for more details).
 - All assignments prior to midterm grade submission must be graded, as this is one of the last opportunities for a student to drop the course with a grade of “W”.
- **Final grades:** If you are teaching an honors section, you do not need to upload final grades, but you must submit your grades to the lab coordinator. This means, that your gradebook must be up-to-date approximately 1 week before final grades are due for submission.
 - See “Grading” section in handbook introductory section above for more details.
- **Agreements Checklist:** Assignment 1 is an Agreements Checklist form that students must download, fill out, and reupload by the 3rd week of class. While the assignment provides extra credit points, it is **not** optional. It must be completed, or the student will be dismissed from the lab.

- **Attendance:** Attendance is mandatory. If a student has an *unexcused* absence, they will receive a “0” on the post-lab assessment for the class that they missed. If they submit an assessment anyways you will need to change the grade to a zero on BBL. Additionally, if a student receives four unexcused absences during the semester, they will automatically receive a grade of zero for the course. Keep good records of attendance in case this occurs. It is courteous to reach out to students nearing the absence limit and inform them of their status but you are not obligated to do so.

Anatomy and Physiology I and II – BSC 215/216

Course Descriptions:

- **BSC 215:** Lecture, laboratory, and laboratory lecture. Integrated survey of human anatomy and physiology that includes cellular aspects; tissues and skin; the skeletal, muscular, nervous, and endocrine systems; and the special senses of sight, hearing, taste, and smell. The lab course provides a hands-on approach to studying human anatomy and physiology through dissection of preserved specimens, observation of synthetic models, microscopic investigations, participation in chemistry experiments, and employing measurements of human physiological features.
- **BSC 216:** Lecture, laboratory, and laboratory lecture. Integrated survey of human anatomy and physiology that includes the respiratory, circulatory, digestive, urinary, and reproductive systems.

Course Duration:

BSC 215: 1 hour 50 minutes; 1 day a week

BSC 216: 1 hour 50 minutes; 1 day a week

Course Contact Information:

- Important Contacts:
 - Todd Casanova (Lab Coordinator):
 - Office: 2421 SEC
 - Phone
 - Office: (205)348-1802
 - Mobile: (225)252-1739
 - Email: tbcasanova@ua.edu

Lecture Professors:

Evan Menzel: ejmenzel@ua.edu

Britton O’Shields: britton.r.oshields@ua.edu, (205) 348-4237

Austin Hicks: arhicks@ua.edu, (205) 348-1783

Office Hours: As a GTA, you are expected to do a minimum of two office hours each week. Of these two hours, at least one should be done during open lab students the opportunity to meet one-on-one with you and to familiarize themselves with the anatomy models. Your presence there is essential to guide them through their difficulties and in case they need further explanations.

Grading: The GTA is expected to grade the three exams and the weekly quizzes and post the grades on Blackboard within one week.

Pearson Mastering A&P: Once you are assigned specific sections, you should have access to that course on Mastering A&P. You should set up the weekly assignments before the course begins, so you don't have to worry about this throughout the semester. This means setting time limits for associated materials and making sure materials will be available to the students. Students should receive 1 week to complete their pre-lab quiz, which must be completed *before* class.

Attendance: The GTA is expected to keep track of attendance at the end of every class. Most lab days there is a quiz, and using those quizzes is an easy way to take attendance.

Lab Setup: The lab setup is under the GTA's responsibility. This is normally done during the prep meeting on Friday afternoon to have the time to pull out all the models or the required materials. Before the actual lab, the only responsibility of the GTA is to make sure the class is in order and the models prepared the previous week are still in place ready to be used for the class. In addition, the GTA should be ready to give the short lecture at the beginning of the class by setting up the PowerPoint presentation.

Cleaning: Regular cleaning duties are expected to be delegated by the GTA to students. For this reason, from the first day of class, encourage students to:

- clean their lab station surface at the end of each lab meeting
- wash glassware and return them to where were found
- properly stow away models and bones, or leave them in the state you found them according to instructions
- Throw away organic waste into the ORGANIC waste bin
- Throw waste chemicals in the unwanted chemicals bin – DO NOT PUT IN THE SINK
- Throw sharp wastes (scalpel blades, needles, broken glass) into the labeled SHARPS bin
- Return the microscopes to their proper storage areas or TURN THEM OFF and cover with dust covers
- Return microscope slides to their correct trays

Lab Take Down: The clean up of the lab is the GTA's responsibility. All the models used during class should be in their correct places and the benches cleaned. If your students labeled the models during class time to practice, make sure to remove them.

- The take down of the entire lab only happens during the lab meetings on Friday afternoon in order to pull out the new material for the following week.

Lab Lectures: At the beginning of every lab, GTAs are required to hold a short lecture to explain and emphasize terms, concepts, and all the anatomical parts the students are responsible for knowing. The GTA is always expected to upload the material used on Blackboard. If additional material is used during the class period to help your students learn better, always make sure that the material is available for them.

Lab Safety:

- Proper laboratory attire is required at all times in the lab, including during exams: long, sturdy pants that cover the knee when sitting (no leggings), a shirt with sleeves that cover the shoulder, sturdy, closed-toe shoes. Students not having the laboratory attire are not admitted in class.
- Food and drinks are never allowed in the laboratory.
- All student bags should be placed under the benches for their and your safety.
- In addition, each GTA is responsible for knowing and following the safety guidelines and communicate them to the students when hazards arise.
- The GTA is also responsible for showing the lab safety video the first day of classes to make sure all the students are aware of the procedures to follow in case of emergency.

Prior Knowledge Required: Completing an anatomy and physiology course will be very useful, albeit not strictly necessary to teach the course. For GTAs who are teaching the course for the first time, it's mandatory to familiarize yourself with the course material in order to communicate effectively all the human anatomy concepts to the students.

Lecture Materials: PowerPoints will be provided by the lab coordinator. Lecture slides may be amended as needed according to your teaching style and to provide the best education to the students. You may add additional slides to help students understand difficult content, assignments, or real-world examples. However, it is important not to remove the original content of the presentation and not to add unnecessary additional information. You are encouraged to make presentations of your own as long all material is covered. **See Box folder** for previously used materials provided by veteran GTAs.

Anatomical models are essential material that should be used by your students during the class period. It is absolutely necessary that they familiarize themselves with the models and they know how to recognize the different parts of each, since it is a huge part of the lab exam. Show them

how to use their time effectively by trying to label the models in class by themselves or in groups. If additional time is needed, encourage them to attend the open labs on Friday mornings. The lab manual is also a fundamental tool that the students should use. In those chapters they can find all the information that will be presented during the class period.

Textbook: Whiting, CC. (2016) Human Anatomy and Physiology Laboratory manual. Pearson publishing company ISBN 013395247

Time Commitment:

Hours are similar for 215 and 216 labs; estimates below are based on one section

- Course duration: **1 hour 50 minutes per week**
- Setting up and taking down the lab: ~ **30 minutes per week**. Note that for several classes it might take longer.
- Prep meeting: **1 hour per week**
- Lecture prep, review PowerPoints and all the needed material: ~ **2 hours per week**
- Office hours / open lab: ~ **2 hours per week**
- Grading of exams: ~ **7.5 hours per semester** ~ 2 hours 30 minutes per exam (3 exams per semester)
- Grading of quizzes ~ **30 minutes per week**

Tips for teaching:

Committing to memory anatomical parts on models will be useful. Students are more likely to stay engaged if the GTA can confidently point out and name parts on models without having to refer to the guidebooks. However, it is wholly up to the students to put in the work and be able to name said parts themselves.

Microbiology Laboratory – BSC 242/312

Course Description: Lecture and laboratory.

- **BSC 242:** For students majoring in nursing, education, and human environmental sciences. Lecture and laboratory. Introduction to microbiology with an emphasis on the relationship between man and protozoa, bacteria, viruses, and fungi.
- **BSC 312:** General microbiology laboratory to accompany BSC 310. BSC 312 can be taken concurrently with 310 or at a later time. BSC 312 is a 2.0 credit hour course. This course will provide the student with experience in laboratory techniques for the isolation, cultivation, identification and quantification of microorganisms, including bacteria, viruses, fungi, protozoa, and algae.

Course Duration:

BSC 242: 2 hours 15 minutes; 1 day a week

BSC 312: 1 hour 40 minutes; 2 days a week (3 hours 20 minutes / week)

Course Contact Information:

- Important Contacts:
 - Julie Jarnigan (BSC 312 Lab Coordinator):
 - Office: Nott Hall 352
 - Phone: (205) 348-5841
 - Email: jrjarnigan@ua.edu
 - Daryl Lam (BSC 242 Lab Coordinator):
 - Office: 404 MHB
 - Phone: (205) 348-3582
 - Email: dwlam@ua.edu

Lecture Professors:

BSC 242: Dr. Daryl Lam: dwlam@ua.edu, (205) 348-3582

BSC 242: Julie Jarnigan: jrjarnigan@ua.edu (205) 348-5841

BSC 312:

- Dr. Julie Olson (Spring semester): jolson@ua.edu, (205) 348-2633
- Dr. Carol Duffy (Fall semester): cduffy3@ua.edu, (205) 348-0310

Office Hours: As a GTA, you are expected to do a minimum of two office hours each week. The BSC 242 and BSC 312 GTAs are also expected to spend a minimum of one hour in the “open lab” sessions on one Friday to help students master the gram staining technique.

Grading:

- BSC 242: There are 3 exams for a total of 90 points out of 100 points possible. The additional 10 points will come from successfully completing Gram stains (5 points) and purifying mixed cultures (5 points). The lab grade will represent 25% of the course grade. Any student who does not complete all 3 laboratory exams will be given a grade of Incomplete or “I”.
- BSC 312: The GTA is expected to grade the 3 exams, the lab report, and the extra credit assignment and post the grades on Blackboard within one week.

Attendance: The GTA is expected to keep track of attendance at the beginning of every class. Attendance is required for both 242 and for 312. Multiple unexcused absences will result in the deduction of points (see syllabus for breakdown of point deductions).

Lab Setup: The lab setup is the GTA’s responsibility and for this reason, before each class, all GTAs are encouraged to arrive at least one hour prior to the beginning of the lab to prepare all the necessary materials for the upcoming lab. This includes pulling media so that it can warm up to room temperature, pulling sterile supplies, setting up demo slides, providing handouts and, if the instructor finds it beneficial, write on the board the procedure of the experiments. Double

check that the lab is clean and that every student has everything necessary for the activities and experiments performed that day. It is also the GTAs responsibility to incubate the cultures for the specified time and then move the bacterial cultures to the fridge until the next lab.

Cleaning: Regular cleaning duties are expected to be delegated by the GTA to students. For this reason, from the first day of class, encourage students to disinfect their lab benchtops with Lophene as soon as they arrive and before leaving the class, properly wash their hands, clean the microscopes, remove labels (tape) from the used tubes and place them in one of the carts present at the front of the class. Each bench should be empty and ready to use for the next lab section.

- **Lab Take Down:** The cleanup of the lab is under the GTA's responsibilities. Due to the fact that in many instances the labs are directly following one another, it is imperative that general housekeeping duties be performed to ensure that the lab is clean and fully operational for the next section. Dispose of all used materials (such as used tubes, plates etc.) in room 207 and discard biohazard materials in the biohazard bins. Before leaving the lab double check that all the Bunsen burners are off and all the gas valves are completely turned off. Discard items from the area, double check that every bottle containing gram staining reagents is closed and all microscopes are placed in the drawers in the proper position. If you are the last GTA of the day, make sure to return all stains and general unused supplies to room 209 and make sure that the hot water bath is turned off if it was used for that specific lab. All unused handouts should also be returned to the handout cabinet in room 210. When demo slides have been set up, switch off, clean, and place back the microscopes used for demos. There should be refill containers of Lophene disinfectant in the front of the room for you to restock disinfectant bottles and gram stain reagent refills can be found under the fume hood in 209. ***Do NOT*** let students refill their stock solution bottles, this must be done by the instructor! Additionally, if you need to restock gloves or restock discard containers for culture tubes, you can find refills in 218 and 209 respectively.

Lab Lectures: At the beginning of every lab, GTAs are required to hold a short lecture to explain and emphasize terms, microorganisms, and procedures that will be highlighted during the lab. It is up to the GTA the decision of writing some notes on the board (can upload picture of board) or use a PowerPoint presentation. In any case, the GTA is expected to upload the material used on Blackboard.

Lab Safety:

- Laboratory attire should be worn at all times including long pants, shirts with sleeves, and closed toed shoes. Students not having suitable attire cannot stay in the lab and should be sent home.

- Lab coats should be worn with the buttons fastened.
- Food and drinks are never allowed in the laboratory.
- All student bags should be placed under the benches for their and your safety.
- Gloves are always necessary during the whole lab period.
- Safety glasses must be worn when using live cultures or chemicals.
- Tables should be disinfected before and after each lab.
- In addition, each GTA is responsible for knowing and following all the safety guidelines and communicating them to the students when hazards arise. Potential hazards in the lab include, but are not limited to: broken glass, fire hazard, spillage, and chemical and biological hazards. Familiarize yourself and instruct the students as to the location of the fire extinguishers, fire blankets, eye washes, emergency showers, first aid kits, and spill containment kits.

Prior Knowledge Required: Ability to perform and demonstrate microbiology laboratory techniques and general knowledge on the biology, ecology, structure, and function of different microorganisms are needed to effectively teach this course. The best way to prepare for microbiology labs is to conduct the experiment yourself with the students' lab manual in hand before class and to take notes of all the possible problems and mistakes the students might run into. Make sure you are familiar with the topic and the material you will be teaching to be able to address and anticipate any questions and concerns that might arise in the lab.

Lecture Materials: PowerPoint samples will be provided by the lab coordinator. Lecture slides may be amended as needed according to your teaching style and to provide the best education to the students. You may add additional slides to help students understand difficult content, assignments, or real world examples. You are encouraged to make presentations your own as long as all material is covered. If using PowerPoints, carefully review that all the information in them are up to date with the procedure and the material used that specific semester and make sure the students have access to them by uploading them every week on Blackboard before each class. In addition, to perform several techniques, printed handouts will be provided by the lab coordinator. Moreover, the lab manual is a good resource for background information and understanding the theory behind the methods used in the lab. The lab manual also has the protocols associated with each day of the course, and is a required text. This manual can be purchased at the Supe Store.

- **See Box folder** for previously used materials provided by veteran GTAs. Lab coordinators will add any new GTA to the Box folder.

Textbooks:

BSC 242: Microbiology Laboratory Theory and Application (Brief Edition), 3rd ed., by Leboffe and Pierce (2016)

BSC 312:

- Laboratory Exercises for BSC 312, by G. Sloan.
- *A Photographic Atlas for the Microbiology Laboratory* by Pierce and Leboffe (Morton Publishing)

Time Commitment: hours are based on *1 section only* (multiply by number of sections you teach)

BSC 242:

- Course duration: **2 hours 15 minutes per week** (most labs don't take the entire time)
- Setting up and taking down the lab: ~ **1 hour to setup and ~30 minutes to take down**. Note that for several classes it might take longer.
- Prep meeting: ~ **30 minutes - 1 hour per week**
- Lecture prep, review PowerPoints and all the needed material: ~ **1 hour per week**
- Office hours: ~ **2 hours per week**
- Grading of exams: ~ **1 hour per exam** (3 exams per semester)

BSC 312: two classes per week, 1 hour 40 minutes each = **3h 20 min per week**.

- Setting up and taking down of the lab: at least **3-4 hours per week** (~1 - 1.5 of setup for each class, .5 of take down). This may vary a little with each GTA depending on whether or not he/she sets up each students' rack of tubes before lab starts. Setting up each rack ahead of time cuts down on confusion, but if the GTA prefers, he/she can allow the students to get the number of tubes needed for each exercise as long as the GTA puts the rack of tubes on the side counter. Passing back inoculated media is optional since that does take time to find each student's seat.
- Lecture prep, review PowerPoints and all the needed material: 1-3 hours depending on experience.
- Set up additional time with the Lab coordinator to practice techniques that might not be familiar to you. Normally, there will be time at the end of prep meetings to practice techniques.
- Office hours: ~ **2 hours per week**
- Grading of exams: ~ **6 hours per semester** ~ 2 hours per exam (3 exams over the course)
- Grading of Lab report ~ **2-3 hours per semester**
- Grading extra credit assignment ~ **2-3 hours per semester**

Tips for Teaching:

- The majority of the students attending this class have never used a microscope before and from this, comes the biggest struggle for them. Help them try to understand what might be the problem they are having but without solving the problem for them, and guide them

through the process to make them more confident and independent. Unfortunately, very often the problem is associated with the microscope itself. Consider showing in class and/or posting to Blackboard the following two YouTube videos:

- [How to Use and Care for a Microscope \(& Oil Immersion\)](#)
- [Microscope for Beginners - Questions and Answers](#)
- Demo slides and expected outcomes of experiments (plates, tubes, etc.) are often provided. Students may want to take pictures for their own reference. In some cases, the GTA may want to perform the experiment as an in-class demonstration. This is often useful for helping students know where things are, and how to properly carry out procedures. As with lectures, be assertive and have all students pay attention to demonstrations, as some may be tempted to begin performing the activities while other students are listening, hence disrupting the lesson.
- If possible, try to learn the names of your students. This creates a more comfortable environment for instructor/students throughout the semester.
 - Tip: Have students write their names above the pocket on their lab coats or reference the index card that is taped to their lab drawer.

Freshwater Studies – BSC 320

Course Description: Lecture and laboratory. Introduction to freshwater natural history and ecology with specific emphasis on the common freshwater habitats of Alabama.

Course Duration:

- Lecture: 1 hour 15 minutes. 2 days a week.
- Lab: 4 hours 20 minutes. 1 day a week.

Course Contact Information:

- Lecture Professor: Dr. Alex Huryn
 - Office: 2107-A Bevill Building
 - Office Phone: (205) 348-4136
 - Email: huryn@ua.edu
- Lecture Professor: Dr. Carla Atkinson
 - Office: 2109-B Bevill Building
 - Office Phone: (205) 348-6805
 - Email: carla.l.atkinson@ua.edu
- Research Technician: Mark Dedmon
 - Office Phone: (205) 348-7747
 - Email: mdedmon@biology.as.ua.edu

Certifications: University Vehicle Certification – Large Passenger Van (see Appendix 3 for instructions for acquiring certification)

Office Hours: One hour per week with additional availability to meet with students one on one.

Building/Room Access:

- Aquatic Biology Field Equipment Room – 1113 Bevill Building
- Secondary Field Equipment Room – 1118 Bevill Building

Grading: The GTA is expected to help the professor with grading of exams and lab practicals.

Attendance: The GTA is expected to keep track of weekly lab attendance. Have a method prepared to take attendance such as sign in sheet, roll call, or electronic check in. Keep track of attendance records and send them to the professor after the final lab meeting.

Field Trip Prep & Wrap Up: BSC 320 is a field-based course which involves visiting various aquatic ecosystems throughout the state of Alabama.

- **Driving:** Safe driving is a main component of the GTA's responsibilities for this course. To hold the GTA position for this course one must acquire a university vehicle certification for large passenger vans. Instructions for acquiring this certification are included in Appendix 3 of this document. In general, the GTA is responsible for picking up a 12-passenger van from fleet services, loading necessary equipment, transporting students to and from field locations, unloading equipment, and returning the van to fleet services after the trip.
 - The GTA should coordinate with the professor to determine a designated spot on campus for picking up and dropping off students.
- **Preliminary Site Visits:** Throughout the semester, it may be necessary for the GTA to visit field sites on days prior to the class trips to deploy instruments, check conditions, or acquire specimen.
- **Equipment:** Various equipment is needed for each week's trip such as waders, nets, seines, aquaria, etc.
 - The GTA is expected to communicate with the professor to determine what equipment is needed for that week's field activity.
 - The GTA is responsible for gathering the necessary equipment in sufficient quantities and loading it into the van.
 - In general, weekly equipment includes but is not limited to: enough waders of varying sizes to outfit all students in the course, enough functional nets (lacking tears) for more than half of the class (students can share), and a jug of ice water for in-field hydration. The majority of these materials are located in the Aquatic Biology Field Equipment Room (Rm. 1113 Bevill), however the ice machine is located in the Secondary Field Equipment Room (Rm. 1118 Bevill). Acquire keys to these rooms from Mark Dedmon (contact information listed above). Additional items may need to be acquired from other sources as instructed.
 - Upon returning from a field trip, all equipment must be unloaded from vans and returned to their designated locations. It is useful to have students help unload equipment after field trips. Wader pairs should be fastened together by a carabiner to avoid mix ups and hung upside-down to dry. Occasionally, large seines or other equipment may need to sit outside to dry before being put away.

Equipment Maintenance: In addition to loading and unloading, the GTA is responsible for keeping track of equipment (taking inventory) and performing routine maintenance on said equipment. This includes but may not be limited to: taking stock of how many waders of each size are present, checking waders for leaks or holes, patching holes in waders or removing them from circulation, counting the number of usable nets (those lacking tears), repairing torn nets, removing mud and debris from heavily soiled field equipment, more in-depth sanitation of field equipment if requested, and communicating with the professor about the current state and counts of field equipment.

Non-Field Lab Activities: Occasionally, field trips will be replaced with in-lab activities. In these cases, the GTA is responsible for setting up the lab as requested, cleaning up afterwards, assisting with sample processing & data analysis, as well as, facilitating discussion.

Lab Practical: There are two lab practicals in this course. The GTA is expected to help set up and proctor each practical. The GTA is also expected to grade lab practicals within a week of administering the exam.

Lectures: The GTA is expected to occasionally cover/present lecture material if requested.

Field Safety: The GTA is expected to communicate proper field safety to students as hazards arise. Potential hazards in the field include but are not limited to: insect bites, heat, deep water, falling, and inclement weather.

Prior Knowledge Required: BSC 320 is an upper level field biology course focusing on freshwater ecosystems. General knowledge about the diversity, ecology, and complexity of freshwater systems is preferred.

Textbook: *Field guide to freshwater microbes, plants and animals of Alabama*, Fall 2018, compiled by A.D. Huryn, M.R. Kendrick, and C.L. Atkinson.

Time Commitment:

- Picking up and returning a 12-passenger van before and after field trips: **~.5 hr/wk**
- Driving a 12-passenger van for quasi-weekly field trips: **~5 hrs/week**
- Assisting with laboratory activities when not in the field (processing samples, analyzing data, facilitating discussion): **~5 hrs/week**
- Visiting field sites on days prior to the class trips to deploy instruments, check conditions, etc.: **~4 hrs/week**
- Maintaining field gear (sampling devices, waders, nets, etc.): **~2 hrs/wk**
- Loading and unloading gear from vans: **~1 hr/wk**
- Office hours: **~1 hr/wk**
- Proctoring exams and lab practicals: **~6 hrs/semester**
- Grading portions of lecture exams if requested (only multiple choice, T/F, fill-in-the-blank): **~4 hrs/semester**
- Grading of lab practical exams: **~3 hrs/semester**

Plant Biology – BSC 360

Course Description: Introduction to the biology of plants with emphasis on their development, evolution, and ecology.

Course Duration: 2 hours and 45 minutes, 1 day a week

Course Contact Information:

- Dr. Juan Lopez-Bautista (lecture professor)
 - Office: 309 MHB
 - Phone
 - Office: 205-348-1791
 - Email: jlopez@ua.edu
- Todd Casanova
 - Office: 2421 SEC
 - Phone
 - Office: 205-348-1802
 - Mobile: 225-252-1739
 - Email: tbcasanova@ua.edu

Certifications: Possible van certification for field trip to botanical gardens (see Appendix 3 for instructions for acquiring certification)

Grading: The GTA is expected to grade all lab reports.

Attendance: The GTA is responsible for taking laboratory attendance and managing absences and excuses.

Cleaning: Regular cleaning duties are expected to be delegated by the GTA to students including but not limited to the washing of used materials, dishes, wiping down lab benches, and disposal of waste.

Inventory: The GTA is responsible for keeping a running inventory of laboratory supplies. This includes but is not limited to: gloves, microscopes, microscope slides, plant specimens, display frames, models, general lab reagents, etc. An account of supplies needed **for a lab** should be taken the week prior to the lab. Any supplies that need ordering should be brought to the attention of Dr. Lopez.

Lab Set Up/Take Down: The GTA is responsible for setting out microscope slides for the lab period. The GTA is also responsible for ensuring each group has enough supplies for the lab session, and that there are no dangerous chemicals or sharps left out from previous labs.

Lecture: The GTA is expected to give a brief lecture before each lab begins. The lecture will introduce any new concepts covered in the lab, as well as reinforce what was taught in Dr. Lopez's lecture. The lecture will also contain a brief walkthrough of the day's lab.

Exams: There are no lab exams for this course.

Lab Safety: The GTA is responsible to communicate proper lab safety to students as hazards arise. Potential hazards in the lab include but are not limited to sharps, glass, formaldehyde, and ethanol (ranging from 70-100%).

Prior Knowledge Required: BSC 360 is an upper level biology course focusing on plants. General knowledge about plant biology, systematics, structure, and evolution is needed to effectively teach this course.

Time Commitment:

- One section for lab: 2 hours 45 min = **2 hours 45 min per week**
- Setting up, prepping, and taking down of the lab: **2-4 hours per week**
- Office hours: **2 hours per week**
- Meeting with individual students: **3 hours per week**
- Inventory of reagents and supplies for the week: **.5 hours per week**
- Grading of general lab assignments: **1-2 hours per week**
- Prep meeting with Dr. Lopez: **1 hour per week**

Invertebrate Zoology – BSC 376

Course Description: Lecture and laboratory. The classification, morphology, evolution, and ecology of invertebrate animals. Writing proficiency within this discipline is required for a passing grade in this course.

Course Duration: 1 hour 50 minutes; 1 day a week (may teach 2 sections)

Course Contact Information:

- Dr. Kevin Kocot
 - Office: 307 MHB
 - Phone
 - Office: 205-348-4052
 - Email: kmkocot@ua.edu

Office Hours: Two hours per week at different times with additional availability to meet with students one on one. The GTA is also expected to hold one hour review sessions before each lab practical with selected specimens out in the laboratory.

Grading: The GTA is expected to help the professor with grading of quizzes and lab practicals. The GTA is also expected to help the professor with the partial grading of midterms and the final exam.

Attendance: The GTA is expected to keep track of weekly attendance through “Questions of the Day”. The GTA is responsible to make the “Question of the Day” and grade the responses.

Cleaning: Regular cleaning duties are expected to be delegated by the GTA to students including but not limited to the washing of dissecting materials, dishes, wiping down lab benches, and cleaning of microscopes.

Animal Care: BSC 376 has a saltwater tank that the GTA is responsible for weekly care of. This includes weekly additions of water, checking of salinity levels, feeding animals, and cleaning the tank as needed. At the beginning of the semester, the GTA will help to set up the tank in the lab and take down the tank at the end of the semester.

Inventory: The GTA is responsible for the maintenance and cleaning of the invertebrate teaching collection.

Lab Set Up/Take Down: The GTA is responsible for proofing lab handouts provided by the professor and printing for students before each lab. Station labels that correspond to each task

outlined in the handout should be created by the GTA and printed before each lab period. The GTA is responsible for getting specimens for the lab period, slides, and other materials needed for each section. This includes but is not limited to setting up each station, putting specimens up in bowls, preparing 70% ethanol dilutions for specimens, setting up dissection pins, dissecting an example specimen for students, creating wet-mount slides, and setting up microscopes. The GTA is also responsible for returning all animals to the saltwater tank, bringing specimens and slides to the prep room, and properly disposing of any dissected material and sharps.

Lab Practical: There are two lab practicals in this course. The GTA is expected to help make questions for the lab practical that touch on what was taught and emphasized during the lab period. With the help of the professor, the GTA helps to set up the exam and is expected to proctor each practical. The GTA is also expected to grade lab practicals within a week of administering the exam.

Pre-lab Lectures: Weekly pre-lab lectures are to be prepared by the GTA. Lectures should be around 15-20 minutes and emphasize terms, animals, and anatomy that will be highlighted during the lab. The GTA is expected to upload the presentation to Blackboard before each lab period.

- **See Box folder** for previously used materials provided by veteran GTAs.

Lab Safety: The GTA is responsible to communicate proper lab safety to students as hazards arise. Potential hazards in the lab include but are not limited to sharps used for dissection, glass, formalin, and ethanol (ranging from 70-100%).

Prior Knowledge Required: BSC 376 is an upper level organismal biology course focusing on invertebrates. General knowledge about the diversity, systematics, ecology, evolution, structure, and function of invertebrates is needed to effectively teach this course. The professor will emphasize Metazoan phylogeny in this course, so the GTA must be familiar with higher level relationships across Metazoa.

Textbook: *Invertebrates* (Third Edition) by Richard C. Brusca, Wendy Moore, and Stephen M. Shuster.

Time Commitment:

- Course Duration: **1 hour 50 minutes per week** (may teach 2 sections)
- Setting up and taking down of the lab **2 hours per week** (~1-1.5 of set up, .5 of take down)
 - Longer for lab practical set up
- Lecture prep **3 hours per week**
 - Create a short lecture for the beginning of the lab

- Create station labels
- Office hours **2 hours per week**
 - Hold review session before each lab practical **2 hours per semester**
 - Additional office hours before each lab practical **2 hours per semester**
- Live animal care **.5 hours per week**
- Inventory of specimens for the week **.5 hours per week**
- Grading of lecture exams (only multiple choice, T/F, fill-in-the-blank) **~6 hours per semester**
 - ~2 hours per exam (3 exams over the course)
- Grading of Lab practical exams **3 hours per semester**
 - ~1.5 hours per practical
- Grading attendance activities **.5 hours per week**
- Grading lecture quizzes 10 quizzes over the course of a semester **5 hours per semester**
 - ~.5 hours for each quiz
- Writing lab practical **3 hours per semester**
 - ~1.5 hours per lab practical

Molecular Biology – BSC 439/539

Course Description: BSC439/539 is an advanced laboratory course that provides students with a “hands-on” introduction to modern molecular biology techniques. Students will learn the plasmid design, PCR primer design and PCR optimization, traditional molecular cloning using restriction enzymes or homologous recombination, quantitative PCR (qPCR) primer design, endogenous gene expression analysis using RT-qPCR, protein purification and characterization using antibody immunoprecipitation and Western Blot. For students who have interest to pursue a career in biomedical research or practice, this course will provide basic training and experience for a strong start for the future laboratory work.

Course Duration: 2 hours 50 minutes; 2 days a week

Course Contact Information:

- Dr. Xiaohui Yan
 - Office: 3309 SEC
 - Phone
 - Office: 205-348-8059
 - Email: xiaohui.yan@ua.edu

Office Hours: There is no requirement for office hours for GTA from faculty.

Grading: The GTA is expected to help the professor with grading of quizzes and lab practicals. **However, no grading duty is required by faculty.**

Cleaning: Regular cleaning duties are expected to be delegated by the GTA including but not limited to the washing of dissecting materials, dishes, wiping down lab benches, and cleaning of microscopes.

Inventory: The GTA is responsible for the maintenance and cleaning of the molecular teaching lab materials. Notify the faculty and lab coordinator if anything is missing or needed.

Lab Set Up/Take Down: The GTA is responsible for proofing lab handouts provided by the professor and printing for students before each lab. Station labels that correspond to each task outlined in the handout should be created by the GTA and printed before each lab period. The GTA is responsible for getting specimens for the lab period, slides, and other materials needed for each section.

Lab Safety: The GTA is responsible for helping faculty to communicate proper lab safety to students as hazards arise. Potential hazards in the lab include but are not limited to sharps used for dissection, glass, formalin, and ethanol (ranging from 70-100%).

Prior Knowledge Required: BSC 439/539 is an advanced laboratory course that provides students with a “hands-on” introduction in performing basic molecular biology techniques. The GTA may need to have some knowledge on molecular biology, chemistry, and biochemistry and wet lab experience on molecular biology techniques. GTAs are able to help faculty introduce students to the theory behind each technique and describe common applications of each technique and help them develop skills to operate laboratory equipment and understand their working principles. Also, GTAs help students to analyze and interpret the experimental results to finish their lab reports.

Textbook: Molecular Biology laboratory manual, BSC439/539, spring 2019.

The manual will be divided into four parts for each experiment. Every part will be posted on Blackboard one week before the corresponding experiment to help the students understand the experimental background and complete the pre-lab quizzes. **One printed copy of the manual will be provided by the instructor at the first lab meeting of each new experiment.** Students are responsible to keep the manual throughout the semester and bring it to every lab meeting.

Time Commitment: (14 hours for returning GTA/18 hours for new GTA)

- Weekly lab supervising: GTA needs to spend an average of 4 hours helping faculty supervise all students in the teaching lab, including performing critical procedures and showing students' experiments in separate rooms. **4 hours each day = 8 hours per week**
- Weekly contact time **30 minutes** pre-lab meeting to assign lab preparation for returning GTA; otherwise, at least two-hour meeting for GTA to understand what she/he needs to do before lab and during lab. **1 hour for returning GTA per week/4 hours per week for new GTA**
- Weekly preparation: average **60-90 minutes** for returning GTA; or faculty has to personally demonstrate solution making and do quality control together with new GTA **3 hours per week for returning GTA/4 hours per week for new GTA**
- Weekly after-lab finishing up: **average 30 minute to 1 hour** to finish the last step which needs longer time or overnight incubation. Collecting samples at off times. Transfer data files to students after lab. **2 hours per week/varies per week**
- No grading duty and no office hours held by GTA

Integrated Genomics – BSC 442/542

Course Description: Lecture and laboratory. An advanced discovery-based laboratory course designed to introduce the process of gene discovery and integrate modern genomics techniques and bioinformatic database usage.

Course Duration: 1 hour and 15 minute lecture; 2 days a week
3 hour and 50 minute lab; 1 day a week (immediately following a lecture)

Course Contact Information:

- Dr. Laura Reed
 - Office: SEC 2330
 - Phone
 - Office: 205-348-1345
 - Email: lreed1@ua.edu

Office Hours: Two hours per week at a set time with additional availability to meet with students one on one. The GTA is also expected to increase availability when assisting students with large projects (e.g., gene annotation).

Grading: The GTA is expected to grade all general lab assignments that are not deemed “major” assignments.

Attendance: Attendance and participation is handled by the professor.

Cleaning: Regular cleaning duties are expected to be delegated by the GTA to students including but not limited to the washing of used materials, dishes, wiping down lab benches, and disposal of waste.

Inventory: The GTA is responsible for keeping a running inventory of laboratory supplies. This includes but is not limited to: pipet tips, gloves, nucleic acid isolation kits, general lab reagents, etc. An account of supplies needed for a lab should be taken the week prior to the lab. Any supplies that need ordering should be brought to the attention of Dr. Reed.

Lab Set Up/Take Down: The GTA is responsible for aliquoting and setting out reagents for the lab period. The GTA is also responsible for ensuring each group has enough supplies for the lab session, and that there are no dangerous chemicals or sharps left out from previous labs.

Exams: There is one lab practical portion of the midterm exam for this course. The GTA is expected to help prepare reagents for this portion of the exam in conjunction with Dr. Reed. The GTA is also expected to proctor both the midterm and final exam for this course in addition to any already required proctoring by the department.

Lab Safety: The GTA is responsible to communicate proper lab safety to students as hazards arise. Potential hazards in the lab include but are not limited to liquid nitrogen, glass, chloroform, phenol, and ethanol (ranging from 70-100%).

Prior Knowledge Required: BSC 442 is an upper level biology course focusing on genomics. General knowledge about genetics, cell biology, DNA/RNA sequencing, and evolution is needed to effectively teach this course.

Time Commitment:

- One section for lab: **3 hours 50 min per week**
- Lectures: twice a week at 1 hour 15 min: **2 hours 30 min per week**
- Setting up and taking down of the lab: **2-4 hours per week**
- Office hours: **2 hours per week**
 - Hold review session before each major assignment: **2 hours per semester**
 - Additional office hours before each large assignment: **10 hours per semester**
- Meeting with individual students: **3 hours per week**
- Inventory of reagents and supplies for the week: **.5 hours per week**
- Grading of general lab assignments: **2-3 hours per week**

General Entomology – BSC 475/575

Course Description: Lecture and laboratory. Survey of the structure, function, classification, and habits of insects.

Course Duration:

- Lecture: 50 minutes, 2 days a week.
- Lab: 3 hours 50 minutes, 1 day a week.

Course Contact Information:

- Professor: Dr. Alex Huryn
 - Office: 2107-A Bevill Building
 - Phone
 - Office: (205) 348-4136
 - Email: huryn@ua.edu
- Research Technician: Mark Dedmon
 - Phone:
 - Office: (205) 348-7747
 - Email: mdedmon@biology.as.ua.edu

Certifications: University Vehicle Certification – Large Passenger Van (see Appendix 3 for instructions for acquiring certification)

Building/Room Access:

- Aquatic Biology Field Equipment Room – 1113 Bevill Building
- Secondary Field Equipment Room – 1118 Bevill Building

Grading: The GTA is expected to help the professor with grading of exams.

Attendance: The GTA is expected to keep track of weekly lab attendance. Have a method prepared to take attendance such as sign in sheet, roll call, or electronic check in. Keep track of attendance records and send them to the professor after the final lab meeting.

Field Trip Prep & Wrap Up: BSC 475/575 is a lab & field-based course which involves visiting various field locations throughout the state of Alabama.

- **Driving:** Safe driving is a main component of the GTA's responsibilities for this course. To hold the GTA position for this course one must acquire a university vehicle certification for large passenger vans. Instructions for acquiring this certification are included in Appendix 3 of this document. In general, the GTA is responsible for picking up a 12-passenger van from fleet services, loading necessary equipment, transporting

students to & from field locations, unloading equipment, and returning the van to fleet services after the trip.

- The GTA should coordinate with the professor to determine a designated spot on campus for picking up and dropping off students.
- **Preliminary Site Visits:** Throughout the semester, it may be necessary for the GTA to visit field sites on days prior to the class trips to check conditions or acquire specimen.
- **Equipment:** Various equipment is needed for each week's trip such as sweep nets, vials, etc.
 - The GTA is expected to communicate with the professor to determine what equipment is needed for that week's field activity.
 - The GTA is responsible for gathering the necessary equipment in sufficient quantities and loading it into the van.
 - Upon returning from a field trip, all equipment must be unloaded from vans and returned to their designated locations. It is useful to have students help unload equipment after field trips.

External Lab Trips: Sometimes additional field trips are scheduled during weekends or non-lab days to make up for missed trips, acquire more specimen, or to visit sites that are too far away to visit during the typical lab period. The GTA may be needed to drive or supervise on some of these outings. Work with the professor to minimize schedule conflicts, these trips should not be missed without a legitimate excuse.

Field Safety: The GTA is expected to communicate proper field safety to students as hazards arise. Potential hazards in the field include but are not limited to: insect bites, heat, falling, and inclement weather.

Equipment Maintenance: In addition to loading and unloading, the GTA is responsible for keeping track of equipment (taking inventory) and performing routine maintenance on said equipment. This includes but may not be limited to: taking stock of the number of usable sweep nets (those lacking tears), repairing torn nets, removing dirt and debris from heavily soiled field equipment, more in-depth sanitation of field equipment if requested, and communicating with the professor about the current state and counts of field equipment.

Non-Field Lab Activities: This course alternates between field trips and laboratory activities. For days spent in the lab, the GTA is responsible for setting up laboratory materials as requested (microscopes, ethanol, etc.), cleaning up afterwards, assisting with insect identification, and facilitating discussion.

Lab Exam: There are two lab practicals in this course. The GTA is expected to help set up and proctor the practicals, as well as, assist in grading them within a week of administering the practical.

Lectures: The GTA is expected to attend lectures and occasionally cover/present lecture material if requested.

Review Sessions: The GTA is expected to run review sessions before each exam to help students prepare.

Prior Knowledge Required: BSC 475/575 is an upper level lab & field biology course focusing on insects. Thorough knowledge of the orders and physical characteristics of insects is necessary to be an effective GTA.

Textbooks:

- *Field Guide to Insects of North America*, Eaton & Kaufman 2007.
- *Photographic Atlas of Entomology & Guide to Insect Identification*, Castner 2001.
- *The Insects: An Outline of Entomology*, Gullan 1994.

Time Commitment:

- Attending lectures: **~2hrs/wk**
- Learning lecture material **~4hrs/wk**
- Review collected insect identifications: **~6hrs/wk**
- Picking up and returning a 12-passenger van before and after field trips: **~.5 hr/wk**
- Driving a 12-passenger van for quasi-weekly field trips: **~5 hrs/wk**
- Assisting with laboratory activities when not in the field (identifying insects, facilitating discussion): **~5 hrs/week**
- Visiting field sites on days prior to the class trips to check conditions, acquire specimen, etc.: **~4 hrs/week**
- Maintaining field gear (sampling devices, nets, etc.): **~2 hrs/wk**
- Loading and unloading gear from vans: **~1 hr/wk**
- Office hours: **~2 hrs/wk**
- Running review sessions before exams: **~4hrs/semester**
- Driving for external lab trips on weekends or non-lab days: **~12 hrs/semester**
- Additional open-lab hours: **~8hrs/semester**
- Proctoring lecture and lab exams: **~6 hrs/semester**
- Grading portions of lecture exams if requested (only multiple choice, T/F, fill-in-the-blank): **~4 hrs/semester**
- Grading lab exam: **~3 hrs/semester**

Aquatic Insects – BSC 476/576

Course Description: Lecture and laboratory. A survey of aquatic insects, with emphasis on their identification, life histories, and ecology.

Course Duration:

- Lecture: 50 minutes, 2 days a week.
- Lab: 3 hours 50 minutes, 1 day a week.

Course Contact Information:

- Professor: Dr. Alex Huryn
 - Office: 2107-A Bevill Building
 - Phone
 - Office: (205) 348-4136
 - Email: huryn@ua.edu
- Research Technician: Mark Dedmon
 - Phone:
 - Office: (205) 348-7747
 - Email: mdedmon@biology.as.ua.edu

Certifications: University Vehicle Certification – Large Passenger Van (see Appendix 3 for instructions for acquiring certification)

Building/Room Access:

- Aquatic Biology Field Equipment Room – 1113 Bevill Building
- Secondary Field Equipment Room – 1118 Bevill Building

Grading: The GTA is expected to help the professor with grading of exams and lab practicals.

Attendance: The GTA is expected to keep track of weekly lab attendance. Have a method prepared to take attendance such as sign in sheet, roll call, or electronic check in. Keep track of attendance records and send them to the professor after the final lab meeting.

Field Trip Prep & Wrap Up: BSC 476/576 is a field-based course which involves visiting various locations throughout the state of Alabama.

- **Driving:** Safe driving is a main component of the GTA's responsibilities for this course. To hold the GTA position for this course one must acquire a university vehicle certification for large passenger vans. Instructions for acquiring this certification are included in Appendix 3 at the end of this document. In general, the GTA is responsible for picking up a 12-passenger van from fleet services, loading necessary equipment,

transporting students to & from field locations, unloading equipment, and returning the van to fleet services after the trip.

- The GTA should coordinate with the professor to determine a designated spot on campus for picking up and dropping off students.
- **Preliminary Site Visits:** Throughout the semester, it may be necessary for the GTA to visit field sites on days prior to the class trips to check conditions or acquire specimen.
- **Equipment:** Various equipment is needed for each week's trip such as waders, nets, vials of ethanol, seines, etc.
 - The GTA is expected to communicate with the professor to determine what equipment is needed for that week's field activity.
 - The GTA is responsible for gathering the necessary equipment in sufficient quantities and loading it into the van.
 - In general, weekly equipment includes but is not limited to: enough vials of ethanol, forceps and trays for all students, enough waders of varying sizes to outfit all students in the course, enough functional nets (lacking tears) for most students (some students can share), and a jug of ice water for in-field hydration. The majority of these materials are located in the Aquatic Biology Field Equipment Room (Rm. 1113 Bevill), however the ice machine is located in the Secondary Field Equipment Room (Rm. 1118 Bevill). Acquire keys to these rooms from Mark Dedmon (contact information listed above). Additional items may need to be acquired from other sources as instructed.
 - Upon returning from a field trip, all equipment must be unloaded from vans and returned to their designated locations. It is useful to have students help unload equipment after field trips. Wader pairs should be fastened together by a carabiner to avoid mix ups and hung upside-down to dry. Occasionally, large seines or other equipment may need to sit outside to dry before being put away.

External Lab Trips: Sometimes additional field trips are scheduled during weekends or non-lab days to make up for missed trips or to visit sites that are too far away to visit during the typical lab period. The GTA may be needed to drive or supervise on some of these outings. Work with the professor to minimize schedule conflicts, these trips should not be missed without a legitimate excuse.

Field Safety: The GTA is expected to communicate proper field safety to students as hazards arise. Potential hazards in the field include but are not limited to: insect bites, heat, deep water, falling, and inclement weather.

Equipment Maintenance: In addition to loading and unloading, the GTA is responsible for keeping track of equipment (taking inventory) and performing routine maintenance on said equipment. This includes but may not be limited to: taking stock of how many waders of each

size are present, checking waders for leaks or holes, patching holes in waders or removing them from circulation, counting the number of usable nets (those lacking tears), repairing torn nets, removing mud and debris from heavily soiled field equipment, more in-depth sanitation of field equipment if requested, and communicating with the professor about the current state and counts of field equipment.

Non-Field Lab Activities: This course alternates between field trips and laboratory activities. For days spent in the lab, the GTA is responsible for setting up laboratory materials as requested (microscopes, ethanol, etc.), cleaning up afterwards, assisting with insect identification, and facilitating discussion.

Lab Practicals: There are two lab practicals in this course. The GTA is expected to help set up and proctor the practicals, as well as, assist in grading them within a week of administering the practical.

Lectures: The GTA is expected to attend lectures and occasionally cover/present lecture material if requested.

Review Sessions: The GTA is expected to run review sessions before each exam to help students prepare.

Prior Knowledge Required: BSC 476/576 is an upper level lab & field biology course focusing on aquatic insects. Thorough knowledge of the orders, families, and physical characteristics of aquatic insects is necessary to be an effective GTA.

Textbook: *An Introduction to the Aquatic Insects of North America*, Merritt & Cummins 1978.

Time Commitment:

- Attending lectures: **~2hrs/wk**
- Learning lecture material **~4hrs/wk**
- Review collected insect identifications: **~6hrs/wk**
- Picking up and returning a 12-passenger van before and after field trips: **~.5 hr/wk**
- Driving a 12-passenger van for quasi-weekly field trips: **~5 hrs/week**
- Assisting with laboratory activities when not in the field (processing samples, analyzing data, facilitating discussion): **~5 hrs/week**
- Visiting field sites on days prior to the class trips to deploy instruments, check conditions, etc.: **~4 hrs/week**
- Maintaining field gear (sampling devices, waders, nets, etc.): **~2 hrs/wk**
- Loading and unloading gear from vans: **~1 hr/wk**
- Office hours: **~2 hrs/wk**

- Driving for external lab trips on weekends or non-lab days: **~12 hrs/semester**
- Additional open-lab hours: **~8hrs/semester**
- Proctoring lecture exams and lab practicals: **~6 hrs/semester**
- Grading portions of lecture exams if requested (only multiple choice, T/F, fill-in-the-blank): **~4 hrs/semester**
- Grading lab practicals: **~3 hrs/semester**

Stream Ecology – BSC 490/590

Course Description: Lecture and laboratory. Thorough study of the structural (physical and biological) and functional (energy flow, nutrient cycling) attributes characteristic of stream and river ecosystems.

Course Duration:

Lecture: 50 minutes, 2 days a week.

Lab: 3 hours 50 minutes, 1 day a week.

Course Contact Information:

- Professor: Dr. Alex Huryn
 - Office: 2107-A Bevill Building
 - Phone
 - Office: (205) 348-4136
 - Email: huryn@ua.edu
- Research Technician: Mark Dedmon
 - Phone:
 - Office: (205) 348-7747
 - Email: mdedmon@biology.as.ua.edu

Certifications: University Vehicle Certification – Large Passenger Van (see Appendix 3 for instructions for acquiring certification)

Building/Room Access:

- Aquatic Biology Field Equipment Room – 1113 Bevill Building
- Secondary Field Equipment Room – 1118 Bevill Building

Office Hours: One hour per week with additional availability to meet with students one on one.

Grading: The GTA is expected to help the professor with grading of exams.

Attendance: The GTA is expected to keep track of weekly lab attendance. Have a method prepared to take attendance such as sign in sheet, roll call, or electronic check in. Keep track of attendance records and send them to the professor after the final lab meeting.

Field Trip Prep & Wrap Up: BSC 490/590 is a field-based course which involves visiting various locations throughout the state of Alabama.

- **Driving:** Safe driving is a main component of the GTA's responsibilities for this course. To hold the GTA position for this course one must acquire a university vehicle certification for large passenger vans. Instructions for acquiring this certification are included in Appendix 3 at the end of this document. In general, the GTA is responsible for picking up a 12-passenger van from fleet services, loading necessary equipment, transporting students to & from field locations, unloading equipment, and returning the van to fleet services after the trip.
 - The GTA should coordinate with the professor to determine a designated spot on campus for picking up and dropping off students.
- **Preliminary Site Visits:** Throughout the semester, it may be necessary for the GTA to visit field sites on days prior to the class trips to deploy instruments, check conditions, or acquire specimen.
- **Equipment:** Various equipment is needed for each week's trip such as waders, nets, seines, sensors, etc.
 - The GTA is expected to communicate with the professor to determine what equipment is needed for that week's field activity.
 - The GTA is responsible for gathering the necessary equipment in sufficient quantities and loading it into the van.
 - In general, weekly equipment includes but is not limited to: enough waders of varying sizes to outfit all students in the course, enough functional nets (lacking tears) for most students (some students can share), and a jug of ice water for in-field hydration. The majority of these materials are located in the Aquatic Biology Field Equipment Room (Rm. 1113 Bevill), however the ice machine is located in the Secondary Field Equipment Room (Rm. 1118 Bevill). Acquire keys to these rooms from Mark Dedmon (contact information listed above). Additional items may need to be acquired from other sources as instructed.
 - Upon returning from a field trip, all equipment must be unloaded from vans and returned to their designated locations. It is useful to have students help unload equipment after field trips. Wader pairs should be fastened together by a carabiner to avoid mix ups and hung upside-down to dry. Occasionally, large seines or other equipment may need to sit outside to dry before being put away.

External Lab Trips: Sometimes additional field trips are scheduled during weekends or non-lab days to make up for missed trips or to visit sites that are too far away to visit during the typical lab period. The GTA may be needed to drive or supervise on some of these outings. Work with the professor to minimize schedule conflicts, these trips should not be missed without a legitimate excuse.

Field Safety: The GTA is expected to communicate proper field safety to students as hazards arise. Potential hazards in the field include but are not limited to: insect bites, heat, deep water, falling, and inclement weather.

Equipment Maintenance: In addition to loading and unloading, the GTA is responsible for keeping track of equipment (taking inventory) and performing routine maintenance on said equipment. This includes but may not be limited to: taking stock of how many waders of each size are present, checking waders for leaks or holes, patching holes in waders or removing them from circulation, counting the number of usable nets (those lacking tears), repairing torn nets, removing mud and debris from heavily soiled field equipment, more in-depth sanitation of field equipment if requested, and communicating with the professor about the current state and counts of field equipment.

Non-Field Lab Activities: Occasionally, field trips will be replaced with in-lab activities. In these cases, the GTA is responsible for setting up the lab as requested, cleaning up afterwards, assisting with sample processing & data analysis, as well as, facilitating discussion.

Lab Exam: There is one lab exam in this course. The GTA is expected to help set up and proctor the exam, as well as, assist in grading the exam within a week of administering it.

Lectures: The GTA is expected to occasionally cover/present lecture material if requested.

Prior Knowledge Required: BSC 490/590 is an upper level field biology course focusing on stream & river ecosystems. Thorough knowledge of the physical and structural characteristics of lotic systems is necessary to be an effective GTA.

Textbook: *Stream Ecology*, Allan & Castillo 2007. Springer.

Time Commitment:

- Picking up and returning a 12-passenger van before and after field trips: **~.5 hr/wk**
- Driving a 12-passenger van for quasi-weekly field trips: **~5 hrs/week**
- Assisting with laboratory activities when not in the field (processing samples, analyzing data, facilitating discussion): **~5 hrs/week**

- Visiting field sites on days prior to the class trips to deploy instruments, check conditions, etc.: **~4 hrs/week**
- Maintaining field gear (sampling devices, waders, nets, etc.): **~2 hrs/wk**
- Loading and unloading gear from vans: **~1 hr/wk**
- Office hours: **~1 hr/wk**
- Driving for external lab trips on weekends or non-lab days: **~12 hrs/semester**
- Proctoring lecture and lab exams: **~6 hrs/semester**
- Grading portions of lecture exams if requested (only multiple choice, T/F, fill-in-the-blank): **~4 hrs/semester**
- Grading lab exam: **~3 hrs/semester**

Appendix

Appendix 1. Introductory Email Samples

Sample Email 1

Welcome to Laboratory Biology I,

My name is Katie Sandlin and I will be your instructor for BSC 115 – **006**. The first laboratory meeting is scheduled for this **Tuesday, August 28th**, at **11:00 am** in **SEC 2429**. If you need help finding the Science and Engineering Complex (SEC), refer to the campus map at <https://www.ua.edu/map/>. I highly recommend trying to arrive early so you have plenty of time to find the lab.

Before our first meeting, you need to **complete the following action items**:

1. You will be required to use Excel to complete multiple data analysis activities throughout the semester. If you don't already have Excel or have an older version, download the newest version for **FREE** by visiting the following webpage:
<https://oit.ua.edu/software/microsoft-office-365/>
2. For the first assignment, you will complete and upload a PDF document. Many students have trouble with getting this done and end up uploading blank documents. Therefore, make sure you already have Adobe Reader downloaded so we can walk through this together in class. You can download it for **FREE** by visiting the following webpage:
<https://get.adobe.com/reader/>
3. You must have a copy of the lab manual. You can only purchase it from the Supe Store (see attached image). Please note, this is a new edition of the lab manual and it has changed significantly since the last version, so you need to buy a new one.
4. If you have a laptop, bring it to the first lab meeting! We will be doing an Excel walkthrough exercise and completing/uploading the PDF checklist.

Also, I would like to inform you of the following important items:

1. Proper attire is **required** in the laboratory **at all times**, regardless of scheduled activities. You will not be allowed to enter the lab until your attire complies with the following code:
 - closed-toe shoes
 - long pants
 - sleeved shirt that covers the shoulders, stomach, and chest

Note: You will NOT need goggles for this course.

2. Food and drinks of any kind are **not** to be brought into the laboratory.

If you have questions about this email or the course in general, before the first laboratory meeting, please do not hesitate to contact me at kmsandlin@crimson.ua.edu.

I look forward to meeting each of you this **Tuesday, August 28th**, at **11:00 am** in **SEC 2429**.

Scientifically yours,

Katie Sandlin

Sample Email 2

Dear All,

My name is xxxx and I will be your instructor for BSC xxx-xxx. You may call me xxxx. The first laboratory meeting is scheduled for xxxx at xxxx in xxxx. This room is in a corner of the second floor in the SEC.

Before the first class meeting, I would like to inform you of several important items. This is what you need to know to get IN and OUT of the first lab successfully.

1. Please note that proper attire is required in the laboratory at all times, **and this includes the first day of lab**. Students violating the dress code will be dismissed from the laboratory until such time as their attire complies with the code.

- a. Closed-toe shoes that cover and protect the feet must be worn in the laboratory.
- b. Long pants that cover and protect the legs must be worn in the laboratory.
- c. Sleeved shirts that cover the torso and upper arms must be worn in the laboratory.

2. Food and drinks of any kind are not to be brought into the laboratory.

3. The University of Alabama has adopted the Blackboard Learn (BBL) course management software, and the Department of Biological Sciences delivers much of the laboratory course content through BBL.

- a. Please familiarize yourself with the course website (<https://ualearn.blackboard.com/>) before the first laboratory meeting.
- b. You must regularly monitor the course website to get important announcements and information.

4. Email is the preferred means of communication between students and instructors outside of scheduled laboratory sessions.
 - a. If you do not use your *@crimson.ua.edu account, ensure that the email is forwarded to the account you do use.
 - b. You **must** regularly monitor your email account to get important announcements and information.

5. Please login to the BBL course page, enter the “*Information*” folder and open the documents “*Syllabus*”, and “*Lab Policies*”. **Read both documents** carefully and have it available to you for the first class, either as a hard copy or on your laptop is fine.

6. In preparation for the first laboratory meeting, please read Lab 2: *Biostatistics* of the laboratory manual. We will finish that lab in class. There will be a post-lab assessment for Lab 2. However, there is not a pre-lab quiz.

7. **I absolutely expect all cell phones** and other communication devices to be put away promptly at the beginning of lab, 5pm. This means I should not see or hear it.

8. Finally, **please bring your laptop computer**. You will need it to complete the first lab, and frequently throughout the semester. If you do not have a laptop computer let me know. I may be able to furnish a few. Also, if you have not downloaded Microsoft Office, please do so. It is free as a student. If you need help with this, please email me.

I apologize for the length of this introductory email. If you have questions about this email, about the Blackboard website or the course in general before the first laboratory meeting, please do not hesitate to contact me at XXXX. I look forward to meeting each of you!

Appendix 2. Help Desk

One of the potential GTA assignments to meet a full teaching load is to serve as a lecture TA for a large enrollment class. The major role of a lecture TA is support to the professor via weekly Help Desk hours. The Help Desk is designed as a supplemental to the instructor's office hours where students can come for additional instruction. Students are encouraged by their professors to bring homework questions or study related materials to receive small-group or one-on-one assistance from a lecture TA.

Lecture TA's generally spend 3 hours per week at the Help Desk (SEC 1354) in 1.5-hour blocks. The times of these blocks are assigned at the beginning of each semester in order to offer help for each course at a number of different times throughout the week and work with the GTA's schedule. During Help Desk hours, TA's are to assist anyone coming for their assigned course. The first semester a GTA is assigned as a lecture TA, they are responsible for attending all lectures for that course. In subsequent semesters, lecture attendance is not compulsory. It is still recommended that the lecture TA attend a lecture at the beginning of each semester to be introduced to the class.

Appendix 3. University Vehicle Certification Instructions

1. First, visit this link to fill out the MVR (Motor Vehicle Record) request form: <https://everest-sf.fu.ua.edu/Runtime/Form/MVRRequestCreate/>

Some notes on the form:

- Relationship: Student
- Department: A&S Biological Sciences
- Manager/Supervision: Catherine Schmandt (click the lookup button and type in "Schmandt", then it will show up as an option)
- Phone Number: 205-348-8509
- Campus PO Box: 870344
- Manager email address: ceschmandt@ua.edu (this should auto-populate)

Once you have submitted the form, notify Catherine Schmandt. She will alert you when you have been approved to drive.

2. Second, use this link to watch the vehicle safety video: <http://riskmanagement.ua.edu/driver-program/>. Once you have watched the video, you will click the link that says "Report Training Completion".

Once you complete these tasks you will be approved to drive a university vehicle.

Appendix 4. Laboratory Safety Procedures

LABORATORY SAFETY

The safety policies described herein are a primary part of the laboratory experience, and will be *strictly* enforced. Willful non-compliance will result in the assessment of penalties, and/or a charge of misconduct. **GTAs must follow the same safety procedures as the students or risk immediate disciplinary action including immediate removal from class and possible loss of future GTA support.**

The *Biosafety Manual* and *Chemical Hygiene Plan* are published by the office of Environmental Health and Safety (EHS) of the University of Alabama, and can be accessed via the following link: <http://ehs.ua.edu/manuals-and-policies/>. While much of the manuals exceed students' needs, GTAs and students must understand and abide by the policies described below.

Dress

Proper laboratory attire is required at all times, regardless of the scheduled activities. Students violating the dress code will be dismissed from the laboratory until their attire complies with the policies described below. In such cases, make-ups will be denied and incomplete assignments will receive grades of "0.00". Repeated violations may result in a charge of misconduct.

1. Closed-toe shoes that cover and protect the feet must be worn in the laboratory. Flip-flops, sandals, and other opened-toe shoes of any design or name, are not permitted in the laboratory setting.
2. Long pants that cover and protect the legs must be worn in the laboratory. Short and capri pants, of any design or name, are not permitted in the laboratory setting.
 - a. Pants should be made of natural (cotton or wool), not synthetic, fibers. Therefore, pajamas, leggings, jeggings and other sleep or sportswear, of any design or name, are not recommended.
3. Sleeved shirts that cover the torso and upper arm must be worn in the laboratory. Shirts that do not cover the midriff, that have a deep-vee neckline, or that do not cover the shoulders and upper arms, are not permitted in the laboratory setting.
4. Hair that is longer than shoulder length must be confined behind the head and shoulders during laboratory sessions.
 - a. Students must not groom their hair in the laboratory.

Hygiene and Personal Protective Equipment (PPE)

1. Students must wash their hands thoroughly when entering and before leaving the laboratory, and after de-gloving.
2. Gloves, to protect the hands, must be worn in the laboratory.
 - a. Gloves are not to be worn outside of the laboratory.
 - b. Gloves should be changed when contaminated, or when integrity is compromised.
 - c. Do not wash or reuse disposable gloves.
 - d. Dispose of gloves in the laboratory regular waste container.
3. Protective eyewear must be worn in the laboratory when procedures that have the potential to create splashes are performed or when labs involve bacterial and/or microbiological culture.
 - a. Protective eyewear can be disinfected using alcohol prep pads.

- b. Students who wear contact lenses should wear eye protection.

Chemical Safety

1. Minimize exposures to all chemicals.
 - a. Avoid skin and eye contact with all chemicals.
 - b. Do not taste or intentionally sniff chemicals.
3. Read chemical labels carefully, and observe all safety precautions.
 - a. All containers must have appropriate labels.
 - b. Unlabeled chemicals should never be used.
 - c. Assume that all chemicals of unknown toxicity are highly toxic.
 - d. If a chemical is produced in the laboratory whose composition is unknown, it shall be assumed the material is hazardous.
4. Determine the potential hazards and appropriate safety precautions before beginning any work.
 - a. Links to Safety Data Sheets (SDS) are provided in the laboratory manual.
 - b. In addition, SDS can be accessed from the EHS website via ChemWatch at <http://jr.chemwatch.net/chemwatch.web/dashboard>.
5. Combine reagents according to the instructions given in the laboratory manual, or by the instructor.
6. Never leave containers of chemicals open.
 - a. In addition, never return used chemicals to their container.
 - b. And, never discard unwanted chemicals into the sink; use only the designated “Unwanted Chemicals” containers.
7. Perform work with hazardous chemicals in a properly working fume hood to reduce potential exposures.
8. Mouth pipetting is prohibited; mechanical pipetting devices must be used.
 - a. In addition, avoid adding solids to hot liquids.
 - b. And, always add acid to water; never add water to acid.
9. Never look into the open end of a test tube or other container that is being heated.

Behaviors

1. Students must observe all warning signs posted outside and inside the laboratory.
2. No food or beverages, of any kind, are ever permitted in the laboratory at any time, regardless of scheduled activities. Food and beverages entering the laboratory must immediately be discarded in the garbage can.
 - a. Tobacco products, gum, candy and similar items are considered food items and are not permitted in the laboratory setting.
3. Cell phone/smart watch (and similar devices) usage is not permitted in the laboratory, unless directed by the instructor.
 - a. Smart devices should be silenced and secured during laboratory sessions.
 - b. Smart devices must be silenced and secured during exams; otherwise, the student may be charged with academic misconduct (cheating).
4. Book bags must be placed in the plastic bins provided in each laboratory, or under the laboratory bench.
 - a. To prevent tripping/falling hazards, book bags cannot be placed in the aisles.

- b. To avoid contamination of personal items, book bags, jackets, etc cannot be placed on the bench top.
5. Students must not lay their head on the bench top for any reason.
6. Students must not handle contact lenses or apply cosmetics of any type while in the laboratory.
7. Horseplay and other acts of carelessness, as well as destructive behaviors, will not be tolerated.
 - a. In addition, students must avoid distracting or startling other persons working in the laboratory.
8. Students must not attend a laboratory session under the influence of alcohol or drugs since they represent a potential danger to themselves and others in the laboratory.
 - a. Students suspected of being under the influence will be dismissed from the laboratory, and requests for make-ups will be denied.
 - i. Such students may be escorted to the Student Health Center or DCH.
 - ii. UAPD may be summoned to manage the case.
9. Students must not disrespect, become belligerent, violent, or hostile, or threaten another student or the instructor. In the event of such an occurrence, UAPD will be summoned to manage the confrontation. In addition, the student will be dismissed from the laboratory, and may be charged with misconduct.

Operations

1. Students are allowed in the laboratory during regularly scheduled sessions only, and they must work under the supervision of a laboratory instructor. Under no circumstance are students permitted to operate independently.
2. Students must know the location of safety equipment (safety shower, fire extinguisher, etc), and must know how to correctly operate the safety equipment.
3. Students must know the evacuation plan for the building, which is posted in the hallway, in the event of an emergency.
4. Aseptic technique must be applied to all work performed in the laboratory. Aseptic technique will reduce the potential for contamination of the experiments and work surfaces.
 - a. In addition, all procedures must be performed to minimize the creation of splashes and/or aerosols.
5. To prevent accidents and injuries, students must follow directions carefully. Unauthorized experiments are not to be conducted.
6. Students are not permitted to remove supplies or materials from the laboratory without the approval of the Laboratory Coordinator.
7. Students must use laboratory equipment only for its designated purpose, and must operate the equipment according to the instructions provided.

Sanitation

1. Students must decontaminate the work surface when entering and before leaving the laboratory, and after any spill or splash.
2. Students must clean and restore their work station, and place the stool under the bench before leaving the laboratory.
3. Students must dispose of laboratory waste in the appropriate receptacle.

- a. Regular laboratory waste is placed in the garbage can.
 - b. Biological waste (animal tissue, animal carcasses, etc) is placed in the biohazard container (red can with red bag).
 - c. Microorganism cultures are placed in autoclave bags (clear).
 - d. Unwanted chemicals are placed in the “Unwanted Chemicals” container (white bucket). Do Not utilize sinks for chemical disposal.
 - e. Sharps (razors, scalpels, needles, etc) are placed in sharps containers (brown boxes).
 - f. Broken glass is placed in a puncture resistant container (white cardboard box).
 - g. Other waste is disposed of as directed by the instructor.
4. Many, if not most, accidents are caused by poor sanitation practices. Students’ work areas must be kept clean and free of obstructions.

ACCIDENTS and INJURY

Non-Medical Emergencies:

1. An “On the Job Injury (OIJ)” report must be completed for all injuries, regardless of the severity of the injury.
2. All accidents and injuries, regardless of severity, must immediately be reported to the instructor and the Laboratory Coordinator.
3. All students suffering injury while participating in the laboratory course must report to the Student Health Center (during normal business hours), or to the DCH Emergency Department (after hours) with the OIJ form.
4. The injured student must return the OIJ form to the Laboratory Coordinator for submission to EHS.

Medical Emergencies:

1. Contact UAPD and report the location and nature of the emergency.
 - a. UAPD will summon emergency medical personnel if required.
2. Inform the Laboratory Coordinator (SEC 2421; (205) 348 – 1802), or the duly designated representative.
3. Do not attempt to render medical assistance unless you are a licensed/certified emergency care provider, and do not leave the patient unattended until told to do so – non-licensed/non-certified persons are not protected under the “Good Samaritan Act” of the state of Alabama.

Appendix 5. Example Performance Evaluation

1. Periodic spot check evaluation form

Instructor Spot-Check Evaluation Form (v1.0)

Instructor: _____ **Evaluator:** _____
Course: _____ **Date:** _____

*The scoring system is a yes or a no (checked in box below). Checking “yes” indicates suitable laboratory performance in the spot-check. A score of “no” indicates there is one or more issues, including poor/ unacceptable performance. In the event of a “no” the evaluator should utilize the **Long Form Evaluation** form to provide detailed feedback. After completing this evaluation the form should be emailed to BSC Office Graduate Academic Support Staff for inclusion in student file..*

A score of yes indicates that the GTA and students are appropriately attired for the lab, lab safety policies are being followed (e.g., no food/drink in lab), appears confident in the classroom exhibits appropriate interactions with students, demonstrates basic knowledge of lab background, procedures, and equipment (if relevant during observation period).

During my observation period, the GTA Instructor exhibited suitable performance for the above laboratory course

YES: _____

NO: _____

If YES, the evaluation is completed. If NO, the evaluator should use the Long-Form Evaluation form to document specific issues.

2. Long Form Evaluation (conducted once annually for each course taught)

Instructor Evaluation Form (v2.1)	Score:	_____
Instructor:	Evaluator:	_____
Course:	Date:	_____

The scoring system is from 0 to 5. A score of 1 indicates poor/ unacceptable performance, 3 average/ acceptable, and a 5 excellent/ outstanding. A score of zero should be reported if the behavior/ criteria were not observed.

Instructor Presence: *This section is mean to reflect the general presence and demeanor of the instructor in the class. We are looking for confidence, professionalism, and a basic understanding of the class material.*

- Appropriately attired for the class, includes proper lab attire for lab class. _____ /5
- Appears confident in the classroom. _____ /5
- Exhibit appropriate interactions with students. _____ /5
- Engages students/ elicits student participation _____ /5
- Handles not knowing the answer to a question well. _____ /5
- Appears knowledgeable about subject matter. _____ /5
- Demonstrates basic knowledge on procedures. _____ /5
- Demonstrates basic knowledge on operation of equipment. _____ /5

Class Management: *This section is meant to reflect how well the instructor maintains order, efficiency, and productivity in the class room.*

- The students are well behaved and respectful. (They are attentive.) _____ /5
- Disruptions are handled with an appropriate response. _____ /5
- Instructor ensures that classroom and safety policies are followed. _____ /5
- Lecture/ activities are set up in an organized fashion. _____ /5
- Handles not knowing the answer to a question well. _____ /5
- Instructor is attentive to students' needs. _____ /5
- Classroom/ lab is clean and organized at the end of class. _____ /5

Presentation: *This section is meant to reflect how much effort/ preparation an instructor puts into the explanation of the material.*

- Presentation is explained in a logical and consistent manner. _____ /5
- Provides context/ insight to material. _____ /5
- Explains procedure of exercises/ activities. _____ /5
- Explains technical details of exercises/ activities. _____ /5
- Instructor does not read off of slides. _____ /5
- Presentation is visually appealing. _____ /5
- Presentation contains all pertinent information. _____ /5
- Instructor appears to be comfortable using the board. _____ /5
- Instructor appears to be comfortable using technology. _____ /5

Remediation Necessary?

No

Yes

Note/ Observations:

Overall Comments:

Appendix 6. Best Practices and Practical Tips Provided by Experienced GTAs

Q: *How do you balance your school work with your teaching assistantship?*

I know of two common approaches to this. The first is to handle your work as a student and your work as a teaching assistant separately. That could mean designating Friday as your day to get your own homework done, Saturday as your day to get your teaching duties taken care of, and Sunday as your day of rest because, hey, you've earned it. The benefit of this approach is that you can set your brain in "student mode" one day and "teacher mode" the next, rather than doing mental gymnastics by switching between the two. It can also allow you to cross whole items off your to-do list. This is my preferred strategy and it has served me well, even unto the third year of my Ph.D.

The second strategy is to do a little bit of student work, then switch to a little bit of GTA work, then switch back to student work, and so on into infinity. The benefit of this approach is that you can slowly make progress on your to-do list without feeling overwhelmed or having to force yourself to focus on a single task for too long. You need to take care of yourself as a person as well. The best way to balance student work and GTA work is to balance all of that equally with having a life outside of being a student and a GTA.

Q: *How do you prepare for teaching a lab?*

Looking at this from the daily perspective of prepping for class, three things immediately come to mind. First, be sure to read what has been assigned for your students (e.g., lab manual or textbook chapters). Second, make sure you review any assessments students will be assigned (e.g., pre-lab quizzes or post-lab assessments) so you can ensure you cover everything they need to know for their assignments. Third, if at all possible, it is highly recommended that you complete the lab yourself, prior to teaching students how to do so! Even if it's something you clearly understand or have done previously, you'd be surprised how much can still go wrong if you don't try the experiment prior to working through it with your students. It's also best to conduct the experiment using the instructions students will have so you can pinpoint any potential areas that might be confusing to them or that they may potentially do incorrectly. While these three things may seem like they will take up a lot of your time, please trust me when I say you will be grateful you did it later because it will help you avoid a lot of time-consuming issues and headaches!!

Q: *How should I manage office hours*

- When students come in with a complaint, refrain from becoming defensive. Ask questions and consider giving yourself a day or two to think before giving the student a final response.

- If more than one student arrives at the same time or nearly the same time, find out if any of them have similar issues and work with them at the same time. However, recognize that some students may be shy in such situations, or have individual questions that they may not want discussed in front of others (e.g., for confidentiality/privacy reasons). So you must also offer time for individual appointments.
- If you have spent a long time working with one student and other students are crowding outside the office door, consider giving the first student an “assignment” and rescheduling another appointment with him/her.
- Depending on the course or lab you are assigned to, students may have assignments they request assistance to complete. Students may ask questions or discuss a concept with you, but it is never your responsibility to give answers or work directly on graded assessments with them.

Q: *How should I handle difficult situations with students if they arise*

- **Tips for Handling Difficult Situations:**
 - Listen with an open mind. Really listen to what they are saying so you understand the many facets of the situation.
 - Ask questions in a manner that is not accusatory and is fact-seeking.
 - If possible, discuss difficult situations in private, away from other students.
 - Always stay professional, especially through email.
 - Never be afraid to go to your lab coordinator or faculty supervisor for advice if a situation requires additional assistance.
- **Tips for Recognizing GTA-Student Relationship Breakdowns:**
 - If students stop following established procedures on asking questions or requesting assistance.
 - When students attempt to divert discussion to personal anecdotes that do not revolve around academia, research, or the assigned material.
 - When email communication becomes informal (i.e., abbreviations, slang, emojis, or other unprofessional responses).