

EVPP 109 - All Sections - "Ecosphere: Environmental Science I-Lab"

LAB SYLLABUS - Fall 2019

26 Aug 2019 (typo corrected 9/9/19)

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I. Instructor Contact Information

A. Lab Instructor Contact Information

There are multiple instructors teaching the various sections of EVPP 109 lab but each section has only one instructor. All EVPP 109 lab sections are governed by this syllabus, regardless of the instructor. All instructor mailboxes are located in DK 3038. Lab information is included on the single Blackboard page that will serve all EVPP 109 lab sections and all sections of the cross-listed EVPP 110 course. The lecture portion of the EVPP 110 course and the EVPP 108 lecture-only course will be served by a separate Blackboard page. Each lab instructor will provide to students on the first day of class their contact information, office hours and office location, which you should record. This information will also be available on the lab Blackboard page after the first week of the semester. It is the student's responsibility to know their lab instructor's name and contact information.

B. Course Coordinator Contact Information

All EVPP 109 lab sections are coordinated by, and all EVPP 109 lab instructors report to, the EVPP 108/109/110/111/112/113 course coordinator, whose contact

information follows:

Course Coordinator: Dr. Kim Largen

Office: DK 3027

Phone: 703-993-1048

Mailbox: DK 3005

Email: klargen@gmu.edu

Office Hours: MWF 7:30am-8:15am and MWF 10:30am-11:15pm in DK 3027, or by appointment

II. University-level Course Information

A. Course Administrative Details

Title: "The Ecosphere - Introduction to Environmental Science I-Lab"

Number: EVPP 109

Section: This syllabus applies to all EVPP 109 lab sections for the fall 2019 semester.

Credits: This stand-alone lab course is worth 1 credit-hour.

Meeting Days and Times: These are specific to each lab section, refer to patriotweb.

Location: All EVPP 109 lab sections meet in DK 3044.

Blackboard: One Blackboard page will serve all EVPP 109 lab sections and all cross-listed EVPP 110 lab course sections. A separate Blackboard page will serve the lecture portion of EVPP 110 and the lecture-only EVPP 108 course.

B. Course Prerequisites

There are no prerequisites for this course.

C. Course Description

Studies components and interactions that make up natural systems of our home planet. Teaches

basic concepts in biological, chemical, physical, and earth sciences in integrated format with lecture, laboratory, and field exercises.

This is an environmental science course, not an environmental studies course.

D. Mason Core Learning Objectives Fulfilled by the Course

EVPP 109 is an environmental science lab course which fulfills, along with the EVPP 108 lecture course, the Mason Core natural science requirements for non-science majors.

The Mason Core natural sciences courses engage students in scientific exploration; foster their curiosity; enhance their enthusiasm for science; and enable them to apply scientific knowledge and reasoning to personal, professional and public decision-making.

To achieve these goals, students will:

- Understand how scientific inquiry is based on investigation of evidence from the natural world, and that scientific knowledge and understanding:
 - evolves based on new evidence.
 - differs from personal and cultural belief.
- Recognize the scope and limits of science.
- Recognize and articulate the relationship between the natural sciences and society and the application of science to societal challenges (e.g., health,

conservation, sustainability, energy, natural disasters, etc.).

- Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information).
- Participate in scientific inquiry and communicate the elements of the process, including:
 - making careful and systematic observations.
 - developing and testing a hypothesis.
 - analyzing evidence.
 - interpreting results.

III. Course Materials

A. Required

The following are required for the lab portion of this course:

- *Environmental Science Lab Manual and Notebook - Volume 1: The Science, 3rd Edition*, (ISBN: 9781524953393), by Kim Largen, published by Kendall Hunt. NOTE: This is an on-line only publication and is the version required for the course.
- Access to a web-enabled device during lab class for the purpose of accessing lab activity instructions and completing and submitting lab data sheets. Students should plan on bringing to every lab class a web-enabled laptop, notebook, tablet, or smart phone.

IV. Course Structure

A. Background on the Nature of the Lab Experience

It is important that students understand up front that the nature of the lab experience in environmental science is probably quite different from lab experiences they may have had in high school or in other college science courses such as biology or physics. The environmental science lab experience is inherently **messy**, both physically and "mentally"!

The physical "messiness" derives from the fact that many lab activities involve going into the field, where students are exposed to nature (variations in weather, insects, poison ivy, possibly snakes, plants, dirt, mud, streams, ponds, etc.). Students can expect to get wet and dirty during these field experiences. Often, samples of materials (soil, water, insects, leaves, etc.) collected in the field are brought back into the lab for observation, experimentation and/or manipulation, again resulting in students getting dirty.

The "mental messiness" derives from the fact that the environment is a huge, complex system with processes that normally occur over large periods of time, neither of which characteristic is conducive to simple lab exercises that can be started and completed during a single lab class period. As a result, some parts of an exercise may require action in the lab during a single week, two weeks in a row, one week and then

not again for several weeks, or one week and then not again for a couple of months. This means that there will ALWAYS be many activities from several different lab exercises going on during any given week in lab class!!! Students must be capable of and willing to **multi-task** in order to derive the desired benefit from the lab exercises.

Please consider the preceding three paragraphs carefully and immediately!! If you are not capable of, or not willing to engage in, multi-tasking, don't like getting dirty and don't like going outside, then EVPP 110 might not be the best natural science general education class for you to take and you might want to consider one of the other courses such as biology, astronomy, chemistry, geology, or physics to meet your natural science general education needs.

B. Lab Class Format

1. Reflective Discussion and Pre-lab Lecture

Each lab class will begin with a brief reflective discussion of the previous week's lab activities.

Following the reflective discussion, your lab instructor will present a pre-lab lecture. During this lecture the lab instructor will 1) present content to provide a basic understanding of the concepts related to the day's activities, 2) address any questions about the pre-lab quiz, and 3) review the procedures to be carried out that day.

The presentation of content to provide a basic understanding of the concepts related to the day's activities is important because the concepts pertaining to the lab activities for a given week will **NOT** usually be in sync with the concepts being covered in lecture that week.

The answers to a pre-lab quiz are available to students after the due date for the pre-lab quiz passes. Instructors will not go over the pre-lab quiz in lab class but students are welcome to ask questions about the pre-lab quiz at the beginning of lab class.

The lab instructor will also do a "talk through/demo" of the procedures to be carried out that day and will point out any corrections or changes to the procedures and any changes in equipment or materials.

Due to the importance of the reflective discussion and pre-lab lecture, students must arrive to lab on time and pay attention to the pre-lab lecture. Students are not to use their personal laptop computers, or any other personal electronic device **during** the pre-lab lecture for any purpose unless directed to do so by their lab instructor.

2. Execution of Lab Exercises

Following the pre-lab lecture, students will work in groups to set-up, monitor, and/or complete activities from one or more lab exercises. A lab exercise consists

of a group of activities related to one or more environmental science topics or concepts. By carrying out these exercises, students obtain experience with the use of materials, techniques, and equipment related to the pursuit of environmental science as well as exposure to the scientific method and the benefits and challenges associated with its use. The lab exercises are found in the lab manual.

C. Lab Class Period

Lab periods are 2 hours 40 minutes long. Students should be prepared to spend the **entire** period in lab class!

D. Lab Schedule

The lab schedule can be found at the end of this syllabus and is posted on lab Blackboard page. This schedule indicates the lab exercises/activities that are planned to be conducted each week. It is important to refer to this schedule to find out what lab exercises/activities you need to read to prepare for each week's pre-lab quiz and lab activities. The schedule also indicates whether the lab activities will be conducted inside and/or outside so that you can dress accordingly. The schedule is subject to change for a variety of reasons including inclement weather or equipment problems. **If changes to the schedule are necessary, they will appear in the lab schedule that is posted on the lab Blackboard page. IT IS THE STUDENT'S**

RESPONSIBILITY TO CHECK BLACKBOARD REGULARLY TO KEEP ABREAST OF THE LAB SCHEDULE.

V. Grading and Coursework

A. Relation of Lecture and Lab Courses

EVPP 109 is a stand-alone lab course and some students are taking it as a stand-alone course. Some students are taking EVPP 109 as well as the stand-alone lecture course EVPP 108 to satisfy a Mason Core natural science lab science requirement. If you are taking EVPP 109 along with EVPP 108, please note that the material in lecture and lab will not be in sync and the required topical background information necessary to understand the lab activities will be presented in the pre-lab lecture at the beginning of each lab class.

Since this is a stand-alone course, the entire grade for EVPP 109 will be based on 300 points derived from your performance in lab class.

B. Course Workload

A general rule of thumb for the amount of time that will be required outside of class time for a course is 1 to 3 hours per credit hour (1 hour/credit hour for "easy" courses, 3 hours/credit hour for "difficult" course). Whether or not this course is "easy", "moderate" or "difficult" depends on each student's background, interests, aptitude, study skills, etc. Depending on where you fall within that spectrum, you should expect to spend between 1 and 3 hours

each week on this lab course outside of the time you spend in lab class.

C. Lab Work and Grade Components

The lab grade will be based on the weekly data sheet grades, the weekly write up grades, weekly pre-lab quizzes, the lab syllabus/safety quiz, the scientific paper tutorial on-line assignment, the lab manual book check, and the formal lab report with peer-review. Explanations of each of these components can be found in the sections of that follow. The table below summarizes what portion of the lab grade will be determined by each of the components of the lab work.

Lab Work Grade Component	# Points Toward	% of Lab Grade
Weekly data sheets (12@7 = 84 possible, 77 counted)	77	25.67%
Weekly write ups (11@8 = 88 possible, 80 counted)	80	26.67%
Weekly pre-lab quizzes (11@5.75 = 63.25 possible, 57.5 counted)	57.5	19.17%
Lab Syllabus and Safety Quiz	12	4.00%
Scientific Paper Tutorial On-Line Assignment	12	4.00%
Formal lab report	46	15.33%
Formal lab report peer-review process	8.5	2.83%
Lab manual book check	7	2.33%
Total	300	100%

1. Weekly Data Sheets (77 of the 300 possible points, or 25.67%)

Prior to leaving each lab class, students will complete and submit electronically the data sheets associated with the lab activities

conducted that day. In any given lab class there may be one to several data sheets completed. The data sheets are accessed via the on-line lab manual. The data sheets must be completed electronically (meaning **no** hand-completion of hard copies of the data sheets). The submission of the completed data sheets will be via uploading the completed data sheets files to the appropriate "weekly data sheets submission folder" in the lab Blackboard page. All data sheets for a given week's lab activities must be submitted prior to the end of the lab class in which the activities are conducted. All of the data sheets from all of the activities completed during a lab class will be combined into a single "weekly data sheets" grade for that lab day. Each "weekly data sheets" grade will count equally toward the points for this component of the lab grade. This component of the lab grade requires no work outside of class. Students who miss a lab, **regardless of the reason for the absence (see "attendance" section), will receive a zero for that week's "weekly data sheets" grade.** There will be 12 "weekly data sheets" submissions, **each worth 7 points** for a total of 84 points. In calculating the final lab grade, only 77 points will be included. This is basically the same thing as dropping the lowest weekly data sheets grade. Data sheets must be **submitted on-line**

before leaving lab class and late data sheets will NOT be accepted.

NOTE: After clicking on a data sheets link in the lab manual, **you MUST SAVE the fillable pdf file PRIOR to entering any data into it.** You must then save the file after you have entered your data prior to electronically submitting the file. Failure to follow this procedure will result in the loss of all data you have entered.

Some data sheets require students to make sketches of their observations, prepare graphs of their data, or to record data while in the field. Since sketches cannot be completed electronically (with the tools readily available to students) and since taking electronic devices to the field may be cumbersome, students may be asked to complete some hard copy sketches and/or graphs on blank paper, using as a model the structure and format shown in the lab manual. In such cases, students will complete and submit the sketches/graphs in hard-copy format prior to leaving lab class.

Data sheets are graded based on thorough completion. Points will be deducted for empty cells, lack of indicated labels, or absence of indicated answers or observations. Students can access the weekly data sheets grading rubric (posted on Blackboard for each week's activities) to see what value toward the point total will be attributed to each part of each of

the data sheets in the weekly data sheets submission.

Students are expected to participate fully in lab class. Full participation includes paying attention to the lab instructor during the pre-lab lecture at the beginning of lab, sharing equally with your group mates the work of conducting the lab activities, participating in class discussions, arriving on time, contributing to lab cleanup, not using any electronic devices during lab unless they are part of the lab activity, and not engaging in any disruptive, inattentive, or unsafe behavior at any time during lab class. Lab instructors will assess class participation through direct observation of, and interaction with, students.

Failure to participate fully, as described above, will result in penalties in the form of deductions from the "weekly data sheets" grade, as detailed in the next section.

a. Deductions from Weekly Data Sheets Grade

i. Punctuality

It is extremely important to arrive to each lab class on time! Important information is provided at the beginning of lab class. **Failure to be present at the beginning of class 1) renders the tardy student unprepared**

to carry out the lab, 2) is disruptive and unfair to the remainder of the class and to the lab instructor, and 3) renders the student ineligible for the perfect attendance bonus. Therefore, **tardiness will not be tolerated and will be penalized, regardless of the validity of the reason for the tardiness.**

- Students arriving up to 30 minutes late to lab will be penalized **1% of that week's "weekly data sheets" grade for each minute the student is late.**
- Students arriving more than 30 minutes late **will not be permitted to participate in the lab** that day and will receive a **ZERO** for that week's "weekly data sheets" grade, will not be permitted to complete that week's weekly write up, and the absence **will** count toward the maximum of three missed labs prior to receiving a zero for the lab portion of the course grade.

ii. Behavior and Participation

When the lab instructor is presenting information to the entire class, whether during the pre-lab

lecture or at any other time during the lab class, students are **expected to pay attention and remain quiet.**

Inattentive behavior includes, but is not limited to, 1) reading non-lab related materials, 2) working on any assignment from any class, 3) sleeping or resting, 4) using any electronic device for any reason during the pre-lab lecture other than for referencing the on-line lab manual, 5) using any electronic device for any non-class-related reason at any time during the lab class period, 6) using devices with earphones, or 7) talking with a classmate when the instructor is addressing the entire class at any time during the class period.

When the group is conducting the actual lab activities, students are expected to be fully **participating** in all aspects of that work. Incomplete participation includes, but is not limited to, 1) reading non-lab related materials, 2) working on any assignment from any class other than the lab activity currently underway, 3) sleeping or resting, 4) using any electronic device for a non-lab activity related

purpose, 5) using a cell phone for a non-lab activity related purpose, 6) using devices with earphones, 7) talking with a classmate without participating in the lab activity, 9) leaving the lab classroom for extended periods of time, 10) not conducting a fair share of the work involved in completing the lab activity, or 11) engaging in any behavior deemed to be distracting, disruptive or unsafe.

- **Inattentive, non-participatory, noisy, distracting, and/or disruptive behavior** by students will be **penalized at the rate of 10% of the weekly data sheets grade.**
- Students who fail to heed the request of the instructor to cease the inattentive, non-participatory, noisy, distracting, unsafe and/or disruptive behavior will 1) be asked to leave the lab class, with the support of campus police if necessary, 2) not be permitted to complete the lab activities for that day, 3) receive a **ZERO** on the weekly data sheets grade for that day, 4) not be

permitted to complete the lab write up for that week, and 5) will be considered to have been absent on that day and that absence **will** count toward the maximum of three missed labs prior to receiving a zero for the lab portion of the course grade.

iii. **Lab Clean Up**

Each student is responsible for cleaning up after themselves whenever they carry out any activity at any place in the lab room. This clean up responsibility is basically an extension of full participation but is addressed separately to emphasize its importance.

The members of each lab group are **collectively responsible** for ensuring that they leave their lab table clean, neat and stocked with all non-consumable materials that were present at their table upon their arrival on any given day. The lab instructor may choose to control the departure of students as they complete the day's lab activities by requiring that each lab group be "checked out" by the lab instructor prior to their departure.

- Regardless of the

method employed, the lab instructor will check each lab table at the end of each lab class and if the instructor finds that a group has left their table dirty, sloppy, or without the required materials, **all the members of that group will be penalized 10% of the weekly data sheets grade per occurrence.**

iv. **Safety Violations**

Students are required to abide by all "Lab Safety Rules and Practices" detailed in the lab manual as well as any additional safety precautions or procedures conveyed to students by the lab instructors or lab staff at any time. Students are further expected to abstain from **any** action or behavior that creates unsafe conditions in the lab for themselves, their classmates, the instructor, and/or the lab staff regardless of whether or not the specific situation is identified in the lab safety rules and practices.

Failing to abide by the safety rules and practices and/or contributing to unsafe laboratory conditions in any manner

will be penalized, as follows:

- **Students who violate anything identified in the "Lab Safety Rules and Practices" or any other safety precaution or procedure conveyed to them by the lab instructor or other lab staff will be penalized at the rate of 25% of the weekly data sheets grade for the first violation.**
- Students who commit two or more violations of anything identified in the "Lab Safety Rules and Practices" or other safety precaution or procedure conveyed to them by the lab instructor or other lab staff **AND/OR** who engage in any behavior deemed by the lab instructor or other lab staff to present an unacceptable and immediate safety threat may 1) be asked to leave the lab class, with the support of campus police if necessary, 2) not be permitted to complete the lab activities for that day, 3) receive a **ZERO** on the weekly data sheets grade for

that day, 4) not be permitted to complete the lab write up for that week, and 5) be considered to have been absent on that day and that absence **will** count toward the maximum of three missed labs prior to receiving a zero for the lab portion of the course grade.

2. **Weekly Write Ups** (80 of the 300 possible points, or 26.67%)

Most of the lab activities have at their end a "discussion and conclusions" section that contains questions pertaining to the lab activity. The "discussion and conclusions" questions constitute the "write up" for that lab activity. The "weekly write up" consists of all the "discussion and conclusions" questions from all the lab activities completed in a given lab class.

Students will access the "discussion and conclusions" file for each lab activity that has such a section via the on-line lab manual. Students will complete electronically (meaning **no** hand-completed hard copies) the "discussion and conclusions" sections for all lab activities completed in a given week and electronically submit the completed files by uploading them to the appropriate "weekly write up submission folder" on the lab Blackboard page **prior to the**

beginning of the students' subsequent lab class.

For some lab activities, students may be required to complete as part of the write up a hard-copy sketch or graph that cannot be completed on-line. In such a case, students will e file electronically along with the other files that are part of that write up.

There will be 11 weekly write up grades, **each worth 8 points** for a total of 88 points. In calculating the final lab grade, only 80 points will be included. This is basically the same thing as dropping the lowest weekly write up grade.

This component of the lab grade requires an estimated 1.5 hours of work outside of class each week.

Weekly write up s are due by the start time of lab class the week following the week in which the activities were completed. Late-arriving students do NOT get an extension the due date/time of the weekly lab write up which is due on line by the official start time of the lab class.

If a student misses a lab class, the write up from the previous lab class is still due on-line by the beginning of the lab that the student misses. In other words, missing a lab class does not change the due date/time of a weekly write up.

Late weekly write ups will NOT be accepted.

Students who miss a lab,

regardless of the reason for the absence (see "attendance" section), will receive a zero for that week's "weekly write up" grade.

The weekly write up is graded based on thorough completion and on accuracy when there is a specific correct answer for a question. Some questions have multiple parts and points will be deducted when all parts of the question are not answered. There are usually questions pertaining to the hypotheses. For these questions, the first part of the question asks whether the data supported or did not support the hypothesis. You must answer this part of the question and your answer **MUST USE THE TERMS "SUPPORTED" OR "NOT SUPPORTED" (OR "DID NOT SUPPORT")** in your data. You will **NOT RECEIVE CREDIT** if you substitute the terms **TRUE or FALSE**, or the terms **ACCEPTED or REJECTED (NOT ACCEPTED)**. We are refraining from the use of the terms "accepting" or "rejecting" a hypothesis because we are not subjecting the data we collect to statistical tests, as would be done in an actual research setting.

The second part of the hypothesis questions asks you to explain why you stated that the data supported or did not support the hypothesis. For this part of the question, your answer **MUST REFERENCE SPECIFIC DATA**.

For example, it is **not** acceptable to state "The hypothesis was supported by the data because that is what our data showed." You would instead say something like "The hypothesis was supported by the data which showed that men's average weight of 175 pounds was greater than women's average weight of 125 pounds."

Students can access the weekly write up grading rubric (posted on the lab Blackboard for each week's activities) to see what value toward the point total will be attributed to each part of the weekly write up.

3. **Weekly Pre-Lab Quizzes** (57.5 of the 300 possible points, or 19.17%)

Each week of the semester (except the weeks of 8/26, 9/2, 10/14, and 11/25) students must complete a weekly pre-lab quiz, which is posted on the lab Blackboard page. **It is the student's responsibility to figure out how to use the Blackboard "quiz" function (called an "assessment") in a timely manner, as there will be no "do-overs" after the due date for a quiz has passed.**

The weekly pre-lab quiz contains questions about the upcoming week's lab activities. The purpose of the weekly pre-lab quiz is to hold students accountable for reading the upcoming week's lab activities **before** coming to lab class. Why is this important? If you read the

activities prior to coming to class you will be less confused about the activities, you will learn more from the activities that you conduct, and you will move more smoothly through the activities resulting in a more efficient use of your time.

The weekly pre-lab quizzes are "open lab manual" but students are expected to do their own work. Copying each other's answers is considered cheating and all cases of suspected cheating will be referred to the GMU Honor Committee.

Weekly pre-lab quizzes are graded on accuracy. **The weekly pre-lab quizzes are due by 11:59pm on Sundays FOR ALL LAB SECTIONS.** Students will be able to see their score on the quiz immediately after they submit it but they will not be able to see the correct answers until after the due date passes each week.

There will be 11 weekly pre-lab quizzes, **each worth 5.75 points** for a total of 63.25 points. In calculating the final lab grade, only 57.5 points will be included. This is basically the same thing as dropping the lowest weekly pre-lab quiz grade.

The weekly pre-lab quiz component of the weekly lab grade requires an estimated 1.5 hours of work outside of class each week (for reading the activities and taking the quiz).

Late submission will not be allowed for this component and

students who do not complete the weekly pre-lab quiz by 11:59pm on a given Sunday will receive a zero for that quiz, no exceptions.

Students will receive credit for timely completion of a weekly pre-lab quiz, even if they end up subsequently missing the lab to which the pre-lab questions pertain. In other words, if a student completes a weekly pre-lab quiz due by 11:59pm on a Sunday but then is sick on Tuesday and cannot attend lab, the student will still receive credit for the weekly pre-lab quiz that they completed.

4. **Lab Syllabus and Safety Quiz** (12 of the 300 possible points, or 4%)

Students will complete a "lab syllabus and safety quiz" which will be **due by 11:59pm on Sunday, 9/8/19**. This quiz is separate from the weekly pre-lab quizzes and the grade received on it cannot be dropped. The purpose of this quiz is to ensure that students 1) have read the lab syllabus and understand its provisions and 2) have read the "Lab Safety Rules and Practices" portion of the lab manual and understand those rules and practices. Students may refer to the lab syllabus and the "Lab Safety Rules and Practices" as they answer the questions on this quiz.

5. **Scientific Paper Tutorial - On-**

Line Assignment (12 points out of the lab total of 300 points, or 4%)

Students will complete an assignment titled "Scientific Paper Tutorial On-Line Assignment". This assignment is posted in the lab portion of the course Blackboard page. The purpose of this assignment is to introduce students to the content and format of a scientific paper in preparation for the assignment of writing a formal lab report in the format of a scientific paper. The assignment is worth 12 points and the grading is based on accuracy. **This assignment is due by 11:59pm on Sunday, 9/29/19. This assignment will not be accepted late.**

6. **Formal Lab Report With Peer-Review** (46 points for the report out of the lab total of 300 points, or 15.33%, and 8.5 points for the peer-review process out of the 300 points possible, or 2.83%)

Students will complete one formal lab report, based on the following activity:

- ***"Molecules and Processes of Life - Activity 6 - Cellular Respiration and the Effects of Pollutants on Its Rate"***

This activity will be completed during your lab class the week of 9/30/19-10/4/19.

The goal of this assignment is to introduce students to the style of writing used to present the process and results of scientific experimentation. Students will be

prepared for the task by 1) reading the lab activities in the lab manual which are structured in a similar manner to the structure of scientific papers (in terms of presenting hypotheses and methods, directing the collection of data, and analyzing that data though the discussion and conclusions questions), 2) completing the "scientific paper tutorial on-line assignment", 3) listening to the lab instructor's explanation of expected content and format of the formal lab report and the grading rubric for the assignment, 4) reading the "Writing a Lab Report" section of the lab manual, 5) reading the grading rubric for this task (which will be available on Blackboard), and 6) participating in the peer-review process in which each student's report will be evaluated by two classmates and each student will evaluate the reports of two classmates.

Data and observations will be made by the lab group during the execution of the assigned lab activity, but **the formal lab report must be the independent work of each student.** Students will submit their report electronically to the course Blackboard page. The SafeAssign program incorporated into Blackboard will evaluate each student's lab report for possible plagiarism. Students are NOT to copy graphs, figures, illustrations or any written portion of the formal lab report from

other students (past or present) or from any other source. **Students suspected of this activity will be referred to the GMU Honor Committee and will be subject to its process and consequences.**

Students who are repeating this course may incorporate portions of their previous lab report into the current lab report provided that the **new data** is utilized and all report sections are adjusted accordingly and that they cite their previous work. A student who chooses to utilize this approach must keep in mind that plagiarism checking software will be able to compare the current report to reports submitted in the past. In other words, if a student plagiarized portions of their previously submitted report, it will be detected on the currently submitted report and will still be considered a violation of the Honor Code (even if your previous lab instructor failed to catch the plagiarism). The minimum sanction recommended for a violation of the Honor Code will be a zero on the assignment.

The first due date for the formal lab report assignment is your lab class the week of 10/21/19-10/25/19 when the **peer-review process** is conducted. **Students must print out and bring to their lab class the week of 10/21/19-10/25/19 TWO hard copies of their formal lab report.** If students arrive at lab

class without the hard copies of their lab report they will be permitted to go to an appropriate location on campus to retrieve or print the hard copies but they will be assessed the normal penalties for being tardy to lab class. During the peer-review process, each student will grade the formal lab reports of two of their classmates using the grading rubric. This means that each student will have their formal lab report graded by two of their classmates. The purpose of the peer-review process is to 1) provide an incentive for students to scrutinize, evaluate and understand the formal lab report grading rubric prior to submitting their lab report to their lab instructors for grading (the instructors will be using the same grading rubric as the used in the peer-review process), 2) give students the opportunity to learn from seeing examples of formal lab reports of different qualities, and 3) give students the opportunity to improve their formal lab report based on input from their peers prior to it being submitted for grading by the lab instructor.

The grades that students receive on their formal lab report from their peers WILL NOT COUNT TOWARD THEIR FINAL GRADE ON THE FORMAL LAB REPORT! HOWEVER, THE PEER REVIEW PROCESS WILL BE THE ONLY OPPORTUNITY

STUDENTS WILL HAVE TO RECEIVE FEEDBACK ON THE REPORT PRIOR TO IT BEING SUBMITTED FOR GRADING BY THE LAB INSTRUCTOR. The purpose of the grades received from one's peers is to give students a sense of the grade they might receive from the lab instructor grading the lab report with the same grading rubric used by the peers. **Participating fully in the peer-review process will be worth 8.5 points of the 300 possible lab points, or 2.83%.** Full credit for the peer-review process will be given for a student who is present on the day of peer-review, brings two hard-copies of their formal lab report, and reviews and grades (using the grading rubric) the formal lab reports of two peers in a thoughtful, thorough, conscientious manner. Fully-participating students will leave their lab class the week of 10/21/19-10/25/19 with two peer-graded copies of their formal lab report.

Students will have two weeks to revise their formal lab report, incorporating as appropriate the comments received and corrections suggested in the peer-review process. Students must **submit to the Blackboard submission folder for their lab section an electronic copy of the formal lab report, in the form of a .doc or .docx document, by the beginning of their lab class during**

the week of 11/4/19-11/8/19. NO LATE SUBMISSIONS OF THE FORMAL LAB REPORT WILL BE ACCEPTED. It is NOT acceptable to email your lab instructor the electronic version of your formal lab report instead of submitting it to the submission folder. It is your responsibility to submit your formal lab report to the correct submission folder successfully by the due time and date. This means you are responsible for making sure that there are no technical difficulties that will prevent you from submitting your formal lab report in a timely manner. This may mean that you should plan on submitting the formal lab report prior to the due time/date so that if a technical difficulty arises you will have time to resolve it and still submit your formal lab report in on time.

The formal lab report submitted electronically by the beginning of each student's lab class the week of 11/4/19-11/8/19 will be **GRADED EXTREMELY STRICTLY** relative to the grading rubric provided on the lab Blackboard page!!!! If students have given due diligence to this assignment, participated fully in the peer-review process, and taken advantage of all resources available to assist in executing this assignment, then their grade should be satisfactory. Lab instructors will be grading the formal lab report

based on the grading rubric (posted on the lab Blackboard page) available to students since the beginning of the semester and utilized in the peer-review process. It is the student's responsibility to understand the provisions of the grading rubric.

Lab instructors will post grades for and feedback on the **formal lab report** to Blackboard by the beginning of each student's lab class during the week of 12/2/19-12/6/19.

The final grade for the **formal lab report will be worth 46 of the 300 points for lab, or 15.33%** of the lab grade.

If a student does not participate in the formal lab report peer-review process (or is absent from lab on the day the process is conducted), they will receive a grade of 0 for the peer-review process. They can submit the formal lab report (by the due date/time) but they will not have the opportunity to receive feedback prior to the submission.

7. **Lab Manual Book Check** (7 of the 300 possible points, or 2.83%)

The on-line lab manual is required for this course. Students are required to have purchased their lab manual, redeemed their access code and set up their lab manual account on-line **no later than 11:59pm on 9/8/19 which is the date and time that the first weekly pre-lab quiz is due and the lab**

syllabus and safety quiz is due.

A "lab manual book check" will be conducted using the lab manual on-line roster feature available to lab instructors. Students who appear on this roster no later than 11:59pm on 9/8/19 will receive 7 points toward their lab total of 300 points. If a student does not appear on the lab manual on-line roster by 11:59pm on 9/8/19, then the student will receive 0 points for this grade component (even if the student subsequently purchases the lab manual and appears on the on-line roster at a later date). **PLEASE NOTE:** Simply purchasing the lab manual prior to 11:59pm on 9/8/19 is insufficient to obtain the 7 possible points for this grade component since just purchasing the lab manual will not enter the student's name into the lab manual on-line roster. In order for a student's name to appear in the lab manual on-line roster, a student must also redeem their lab manual access code (received at purchase) and set up their lab manual account.

There is only one opportunity to receive these points and failing to purchase the manual, redeem the access code and set up the lab manual account no later than 11:59pm on 9/8/19 will result in a permanent loss of these 7 points.

The purpose of this grade component is to encourage student to obtain the required lab materials in a timely manner.

Students will need access to their on-line lab manual in time to complete the first weekly pre-lab quiz and the lab syllabus and safety quiz, which are both due by 11:59pm on 9/8/19, as well as to access the weekly write up pages that are due the week of 9/9/19.

VI. Course Policies**A. Lab Safety Orientation and Rules and Acknowledgement Form**

EVPP 110 lab is a relatively safe laboratory experience. However, there are always potential risks involved in any lab or field activity. Students are responsible for reading and abiding by the "Lab Safety Rules and Practices" found in the lab manual. These safety guidelines are designed to alert you to the potential safety hazards associated with, and safe behaviors and practices expected during, EVPP 110 lab class. Instructor's may expel a student from the lab classroom at any time if the instructor believes that the student's actions or behavior presents a safety risk to them or anyone else in the classroom.

Students will answer questions pertaining to the "Lab Safety Rules and Practices" along with questions pertaining to the lab syllabus on the "Lab Syllabus and Safety Quiz" described on page 14 of this syllabus.

Students will be required to print out, sign and submit the "Lab Safety Orientation and Safety Rules Acknowledgement Form". This form is found in the lab manual. Students

must print out this form and complete it, including an original signature, and submit it in hard-copy form at the beginning of the 2nd lab class meeting. **Students who do not submit this form at the beginning of the 2nd lab class meeting will...**

- **not be permitted to participate in lab classes** until the form is submitted
- **receive zeros for all lab work missed due to their absence(s) AND any absences for this reason WILL count toward the maximum of 3 missed labs** prior to receiving a grade of zero for the lab portion of the course

B. Attendance

1. Expectations

Attendance is expected and required at ALL labs. When a student misses a lab exercise, they miss more than just the data that was gathered. The student misses first-hand observations, hands-on experiences, cooperative learning opportunities, the use of equipment, and exposure to the challenges of experimental design and data collection techniques. With that in mind, it follows that there is no way to fully "make-up" that learning experience when a lab class is missed, **regardless of the validity of the reason for the absence.** To rephrase: ***Even if the absence is unavoidable, the result of a valid reason, and/or not your fault, being absent will result in a zero for that week's***

weekly data sheets and weekly write ups. Simply obtaining the data from another student and completing the weekly data sheets does not and cannot serve as a substitute.

2. Consequence of Missing a Lab

a. General

Students are expected to make every attempt to fulfill the scheduling commitment that they made when they registered for their lab section. Students **absent from lab for ANY REASON will not be permitted to submit the weekly data sheets or the weekly write ups or participate in the peer review process** for the day missed and will receive a **zero** for those grades. For learning purposes, students are responsible for obtaining all information and data from the missed lab class from their group members, not from their lab instructor.

STUDENTS CANNOT MAKE UP A MISSED LAB BY ATTENDING ANOTHER LAB SECTION!!!!

b. Labs Missed Due to Late Registration

Labs missed because a student registered late for the class **will still count as absences and the student will receive zeros for any work** (weekly data sheets, weekly

write up, pre-lab quizzes) associated with those missed labs. Labs missed due to adding the course late **WILL** also count toward the maximum of 3 missed labs prior to receiving a grade of zero for the lab portion of the course. Students who miss labs due to registering late for the course will not be eligible for the lab perfect attendance bonus.

c. **Labs Missed Due Participation in University Activities or Religious Observances**

According to University Academic Policy (AP) 1.6.1, students must provide their instructor within the first two weeks of the semester a list of "the dates of major religious holidays on which they will be absent, and the dates for which they are requesting an excused absence for participation in any university-sponsored activity scheduled prior to the start of the semester, and as soon as possible otherwise." Please refer to AP 1.6.1 at <https://catalog.gmu.edu/policies/academic/registration-attendance/registration-attendance.pdf> for additional information.

Students who miss a lab due to a religious observation or participation in a university-sponsored activity **AND** notified their lab instructor

two weeks in advance, per AP 1.6.1, **will** be permitted the following "reasonable" opportunities to reduce the impact on their grade of those lab absences:

- Students may obtain the data from the missed lab from a group mate and use it to complete the weekly write up which must be submitted on-line prior to the beginning of the lab class following the missed lab class. Students will therefore receive credit for the weekly write up for a lab missed for religious observance or participation in university-sponsored activities. The due date for the weekly write up will be the same for a student that misses a lab for a religious observance or participation in a university-sponsored event as for students that did not miss the lab.
- Students will receive credit for a weekly pre-lab quiz that they complete even if the quiz pertains to a lab subsequently missed for religious observance or participation in

university-sponsored activities. To be successful in answering the questions on the weekly pre-lab quiz, students will need to obtain data for the lab they missed from a group mate. The due date for the weekly pre-lab quiz will be the same for a student that subsequently misses a lab for a religious observance or participation in a university-sponsored event as for students that did not miss the lab.

Academic policy 1.6.1 requires that "reasonable" opportunities be provided to reduce the impact on a student's grade caused by missing a lab due to a religious observance or participation in a university-sponsored event. Since there is no way to recreate for absent students the execution of the hands-on, interactive experiences that occur during the lab class, there is **NO** "reasonable" opportunity to make up the following aspects of the course work and students absent due to religious observance or participation in university-sponsored activities are subject to the following:

- Even though students

are expected to obtain the data from activities conducted during a lab class that they missed (so that they can learn the concepts, prepare for exams), students will NOT receive credit for those data sheets. In other words, students will receive a zero for the weekly data sheet grade for the week that they miss lab due to religious observance or participation in university-sponsored activities.

- Students who are absent from the lab class during which the lab report peer-review process is carried out will NOT receive credit for the peer-review assignment and will not have the opportunity for their lab report to be reviewed by their peers prior to submitting the report for grading by the lab instructor.
- Absences from lab due to a religious observance or participation in a university-sponsored activity WILL count toward the three absences permitted

prior to triggering a zero for the entire lab portion of the course.

3. Consequence of Missing More Than Three Labs

Due to the importance of participating in the lab portion of the EVPP 110 course,

- MISSING MORE THAN 3 LABS WILL RESULT IN AN AUTOMATIC ZERO FOR THE ENTIRE LAB PORTION OF THE COURSE GRADE. This is equivalent to the loss of a full 30% of the 4-credit hour course grade.

4. Adjustments to Compensate for Strict Attendance Policy

The following provisions are meant to offset the strict attendance policy for lab.

a. Some Points Dropped from Three Lab Components

In calculating the final lab grade, 77 the 84 weekly data sheet points will be included, 80 of the 88 weekly lab write up points will be included, and 57.5 of the 63.25 weekly pre-lab quiz points will be included. This is essentially equivalent to dropping the lowest grade from each of these three lab grade components.

b. Perfect Attendance Bonus

Since attendance at all lab class meetings is expected and important, **STUDENTS WHO**

HAVE PERFECT ATTENDANCE IN LAB WILL RECEIVE EXTRA CREDIT IN THE AMOUNT OF 6 POINTS (2%) ADDED TO THEIR FINAL LAB GRADE. For the purpose of this bonus, "perfect attendance" is defined as not missing any lab classes AND not having received any penalties for late arrival, early departure, or poor behavior or participation! In other words, being marked present for every lab but showing up late or leaving early to/from some number of them is not considered "perfect attendance" and neither is being present at every lab yet not participating fully in some number of them. Students who register for the class late and miss one or more labs for this reason, miss labs due to religious observation or participation in university-sponsored events will NOT be eligible for the perfect attendance bonus.

C. Switching Lab Sections

Students who anticipate that they will have schedule conflicts on more than three occasions for the lab section for which they are registered should consider changing their registration to a different section, space permitting. Lab instructors will **NOT** entertain requests for an "unofficial" lab switch. All changes in lab sections must be "official"

(through the registrar's office) and, therefore, must be completed by **GMU's official last day to add a class, 9/3/19.**

D. Personal Electronic Device Use in Lab

As noted previously, students are required to bring to every lab class a personal, web-enabled device for the purpose of accessing the on-line lab manual and completing and electronically submitting the weekly data sheets prior to leaving each lab class. **However, no personal electronic devices are permitted to be used in lab class** at any time or for any purpose OTHER THAN to access the on-line lab manual or other websites necessary for the execution of the lab activities and completion of the data sheets. Students using such devices for any purpose during the pre-lab lecture or for non-lab-related purposes at any time during the lab class will be considered to be engaging in inattentive behavior and will be subject to the penalties specified above in the "deductions from the weekly data sheets grade" section.

E. Resolving Disputes Between Lab Instructors and Students

Students who have disputes with their lab instructor, particularly about grades, must make every effort to resolve those disputes by working directly with their lab instructor. Students are strongly encouraged to document the issues they have and all attempts they have made to resolve them. **Please note:** If a student seeks

to involve the course coordinator in resolving disputes with a lab instructor, the student should be aware that the course coordinator will: 1) expect that the student has already approached the lab instructor and, therefore, that the lab instructor will be aware of the student and their identity and issue; 2) discuss the situation with the lab instructor and, in so doing, identify the student and the issue involved; and 3) require a meeting with the student, the lab instructor, and course coordinator, simultaneously, to discuss the issue and its resolution.

F. Email Expectations

To comply with federal privacy laws, both students and instructors **must** use their MasonLive email accounts to correspond with each other. It is further expected that students use their MasonLive email account in order to receive important University information, including messages related to this class (see also "student privacy" in section VII part D below). The instructor will **not** open emails if the sender is not identifiable/recognizable. The instructor will attempt to respond to emails within 48 hours but students must recognize that the instructor is not on-line 24/7. Clearly stating the purpose of the email in the subject line and the **lab section you are in** will help the lab instructor provide a faster response to emails. The instructor will **not** give priority to emails requesting information that is clearly available in the syllabus or on

Blackboard, and the response to such emails will be "see syllabus."

G. Instructional Continuity in the Event of University Closings

In the event that a lab class is cancelled due to the university closing early, closing all day, or opening late for any reason, students **may** be directed by the lab instructor or course coordinator to complete alternative, on-their-own activities as a way to make up for the cancelled lab class(es). In the event that it becomes necessary to do so, the instructor will inform students of the necessity and provide instructions for accessing and completing the alternative activities.

H. Grades in Blackboard

1. Grades Recorded in Blackboard

All official grades for lab work will be recorded in the Blackboard gradebook. It is the student's responsibility to monitor the grades recorded in Blackboard and to inform the lab instructor in a timely manner of any perceived discrepancies. To view your grades in Blackboard, click on the "My Grades" tab in the menu on the left side of the Blackboard page. The following grades will be recorded for lab in Blackboard:

- **Lab grades recorded each week:**
 - **Weekly Data Sheets:** The column for each week's weekly data sheets grade will be headed with the date range for the week that the activities were completed followed by

"WDS", the number of possible points, and the posting date and time. For example, for the first week of lab for the semester the column will be headed "8/26-8/30 WDS (out of 7)(posted 8/15/19, 8:49pm)". The weekly data sheets grades are recorded as the number of points received, not as a percentage score.

- **Weekly Write Up:** The column for each week's weekly write up grade will be headed with the date range for the week that the activities were completed followed by "WWU", the number of possible points, and the posting date and time. For example, for the first week of the semester the column will be headed "8/26-8/30 WWU (out of 8)(posted 8/15/19, 8:58pm)". NOTE: The date range does not reflect the due date range since the weekly write ups are due prior to the beginning of your lab class the week **after** the activities were completed. The weekly write up grades are recorded as the number of points received, not as a percentage score.
- **Weekly Pre-Lab Quiz:** The column for each week's weekly pre-lab quiz grade

will be headed with the due date, followed by "WPLQ due by 11:59pm" and abbreviations of exercise names and activity numbers, the number of possible points, and the posting date and time. For example, for the first weekly pre-lab quiz for the semester the column will be headed "9/8 WPLQ due 11:59pm - Succession on a Small Scale 1-2 (out of 5.75)(posted 8/4/19, 11:23am)". The weekly pre-lab quiz grades are recorded as the number of points received, not as a percentage score.

- **Lab grades recorded once during the semester:**

- Lab Manual Book Check: The grade for the lab manual book check will be recorded as the number of points received and will appear in a column headed "9/8 Lab Manual Book Check (out of 7)".
- Lab Syllabus and Safety Quiz: The grade for the lab syllabus and safety quiz will be recorded as the number of points received, not as a percentage score, and will appear in a column headed "9/8 LSSQ due 11:59pm - Lab Syllabus-Safety Quiz (out of 12)(posted 8/15/19, 9:15pm)".

- Scientific Paper Tutorial: The grade for the scientific paper tutorial assignment will be recorded as the number of points received, not as a percentage score, and will appear in a column headed "9/29 Sci Pap Tutorial due by 11:59pm - Scientific Paper Tutorial On-Line Assignment ASSESSMENT (posted 8/5/19, 8:35am)".
- Lab Report Peer-Review Process: The grade for the lab report peer-review process will be recorded as the number of points received, not as a percentage score, and will appear in a column headed "10/21-10/25 Peer Review (out of 8.5)".
- Formal Lab Report: The grade for the formal lab report will be recorded as a percentage score, not as the number of points received, and will appear in a column headed "FLR Due....." followed by the date, lab section information, and instructor name and "Formal Lab Report Electronic Submission."

- **Lab grade total columns:** The following columns, headed as shown below, will update automatically throughout the semester:

- "WDS Total (max of 77)": This column will show a running total of all points accrued to date on the weekly data sheets. Since Blackboard cannot "drop" one of the scores it is important to note that this column could show a total higher than the maximum 77 points from this grade component that will count toward the final lab grade.
- "WU Total (max of 80)": This column will show a running total of all points accrued to date on the weekly write ups. Since Blackboard cannot "drop" one of the scores it is important to note that this column could show a total higher than the maximum 80 points from this grade component that will count toward the final lab grade.
- "WPLQ Total (max of 57.5)": This column will show a running total of all points accrued to date on the weekly pre-lab quizzes. Since Blackboard cannot "drop" one of the scores it is important to note that this column could show a total higher than the maximum 57.5 points from this grade component that will count toward the final lab grade.
- "# Lab Absences": This column will show a running

total of THE NUMBER OF LAB **ABSENCES** THAT HAVE OCCURRED TO DATE IN THE SEMESTER. This is **not** a point column that contributes to the total number of lab points accrued! Since students who miss more than three lab classes will receive a zero for the entire lab portion of the course, this column is provided as a way for students to easily track **their total number of lab absences to date**. **A "0" in this column is a good thing - meaning that a student has had no lab absences.** A "4" in this column means that a student has missed more than three lab classes and will, therefore, receive 0 out of the 300 possible points for lab.

It is important to note that Blackboard is NOT set up to calculate student's overall lab grade at any point during the semester. Blackboard creates its own "total" column into which every grade entered into Blackboard is added, regardless of the purpose of the values entered and which cannot be eliminated or removed from view of the student.

It is the student's responsibility to understand the preceding paragraph. Failing to understand the preceding paragraph could result in a student mistakenly concluding that their lab

grade (or course grade) is much higher than it actually is.

It is the student's responsibility to be aware of the lab attendance policy and of the number of absences they are accruing in lab class.

It is also the student's responsibility to inform the lab instructor of any perceived errors in the grades recorded in Blackboard.

VII. University Policies

A. Academic Integrity

EVPP 110 lecture and lab is governed by the GMU Honor Code. Please refer to the Office of Academic Integrity website at <https://oai.gmu.edu> for a full description of the code and the honor committee process. All course work is expected to be completed INDIVIDUALLY. Copying classmates' work on any assignment or exam (except for the sharing of raw data) is considered **cheating** and a violation of the Honor Code. The formal lab report must be the independent work of each student. If an instructor discovers that two or more students have submitted work (especially lab reports) that are partially or entirely identical, all students involved will be reported to the Honor Committee with a minimum recommended sanction of a zero on the assignment. Violations of the Honor Code will not be tolerated.

Another aspect of academic integrity is the free exchange of ideas. It is expected that all aspects of this class will be conducted with

civility and respect for differing ideas, perspectives, and traditions. When in doubt about any aspect of academic integrity as it pertains to this course, please ask for clarification.

B. Disability Accommodations

If you have a learning or physical difference that may affect your academic work, you will need to furnish appropriate documentation to the Office of Disability Services. If you qualify for accommodation, the ODS staff will give you a form that details your accommodations and you must provide your instructor with a copy of that form. In addition to providing your instructor with the appropriate form, please take the initiative to discuss your accommodations with your instructor at the beginning of the course, and as needed during the semester. If you have contacted the Office of Disability Services and are waiting to hear from a counselor, please inform your instructor. For more information on disability accommodations, visit the Office of Disability website at <https://ds.gmu.edu/>.

C. Diversity

The following is George Mason University's "Diversity Statement", verbatim from <http://stearnscenter.gmu.edu/professional-development/mason-diversity-statement>.

"George Mason University promotes a living and learning environment for outstanding growth

and productivity among its students, faculty and staff. Through its curriculum, programs, policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth.

An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected.

The reflection of Mason's commitment to diversity and inclusion goes beyond policies and procedures to focus on behavior at the individual, group and organizational level. The implementation of this commitment to diversity and inclusion is found in all settings, including individual work units and groups, student organizations and groups, and classroom settings; it is also found with the delivery of services and activities, including, but not limited to, curriculum, teaching, events, advising, research, service, and community outreach.

Acknowledging that the attainment of diversity and inclusion

are dynamic and continuous processes, and that the larger societal setting has an evolving socio-cultural understanding of diversity and inclusion, Mason seeks to continuously improve its environment. To this end, the University promotes continuous monitoring and self-assessment regarding diversity. The aim is to incorporate diversity and inclusion within the philosophies and actions of the individual, group and organization, and to make improvements as needed."

D. Student Privacy

Student Privacy is governed by the Family Educational Rights and Privacy Act (FERPA). Students must use their MasonLive email account to receive important University information, including messages related to this class (see also "email expectations" above). See <https://registrar.gmu.edu/ferpa/> for more information.

E. Student Support Resources

There are a number of resources available to students at George Mason University to help facilitate student success. Some of those resources and links to the associated websites are provided below:

- University Catalog at <http://catalog.gmu.edu/>
- University Policies at <https://universitypolicy.gmu.edu/>
- Counseling and Psychological Services at <http://caps.gmu.edu/>
- INTO George Mason (program for international students) at

<http://www.intohigher.com/us/en-us/the-universities/into-mason.aspx>

- Learning Services at <http://caps.gmu.edu/learning-services/>
- University Career Services at http://careers.gmu.edu/?_ga=1.173099747.1501406856.1441291419
- University Writing Center at <http://writingcenter.gmu.edu/>

F. Emergency Preparedness

George Mason University is committed to maintaining a safe learning environment. All members of the academic community should be familiar with the basic emergency procedures for a variety of situations including severe weather, medical emergencies, and workplace and campus violence. Students are strongly encouraged to register their mobile phone to receive emergency notifications from Mason Alert (go to <https://ready.gmu.edu/masonalert/> to register) in the event of a campus emergency. Please review the Emergency Preparedness Guides at <https://ehs.gmu.edu/guides/>.

EVPP 109/110 Lab - Schedule - Fall 2019 (subject to change) - 8/26/19

Week #	Mon	Tue	Wed	Thur	Fri	Lab Exercises/Activities	Location
1	8/26	8/27	8/28	8/29	8/30	<ul style="list-style-type: none"> • Administrative review • Syllabus review • Safety review • Scientific Method 1. Hypothesis Testing	Lab
2	9/2	9/3	9/4	9/5	9/6	<ul style="list-style-type: none"> • NO LABS - LABOR DAY WEEK Independent Assignment: Scientific Paper Tutorial On-Line Assignment - DUE 9/29	Not applicable
3	9/9	9/10	9/11	9/12	9/13	<ul style="list-style-type: none"> • Succession on a Small Scale 1. Winogradsky Column Tutorial 2. Winogradsky Column Preparation	Outside & Lab
4	9/16	9/17	9/18	9/19	9/20	<ul style="list-style-type: none"> • Molecules and Processes of Life 1. Microscopy 2. Properties of Water and Their Alteration by Pollutants 4. Diffusion and Osmosis - all	Lab
5	9/23	9/24	9/25	9/26	9/27	<ul style="list-style-type: none"> • Diversity of Life 1. Establishing a Quadrat 4. Leaf Litter Organisms - Set Up 8. Pitfall Traps - Set Up <ul style="list-style-type: none"> • Molecules and Processes of Life 3. DNA Extraction and Damage by a Pollutant SCIENTIFIC PAPER TUTORIAL ON-LINE ASSIGNMENT DUE 9/29/19 by 11:59pm	Outside & Lab

Week #	Mon	Tue	Wed	Thur	Fri	Lab Exercises/Activities	Location
6	9/30	10/1	10/2	10/3	10/4	<ul style="list-style-type: none"> • Molecules and Processes of Life 6. Cellular Respiration and the Effects of Pollutants on its Rate <i>(Note: This activity serves as the basis of the formal lab report)</i> • Writing a Lab Report • Diversity of Life 9. Pitfall Traps - Completion 	Outside & Lab
7	10/7	10/8	10/9	10/10	10/11	<ul style="list-style-type: none"> • Diversity of Life 2. Bacteria in Soil - Set Up 5. Leaf Litter Organisms - Completion 6. Microfungi - Set Up 10. Macrofungi 11. Protists 	Lab
8	10/14	10/15	10/16	10/17	10/18	<ul style="list-style-type: none"> • NO LABS - FALL BREAK WEEK <i>Independent work on lab report - Due for peer-review the week of 10/21</i> 	Not applicable
9	10/21	10/22	10/23	10/24	10/25	<ul style="list-style-type: none"> • Diversity of Life 3. Bacteria in Soil - Completion 7. Microfungi - Completion • Formal Lab Report PEER-REVIEW PROCESS (bring two hard copies of report) 	Outside & Lab
10	10/28	10/29	10/30	10/31	11/1	<ul style="list-style-type: none"> • Diversity of Life 12. Trees • Freshwater Stream Organisms 1. Field Data Collection From Stream 2. Identifying Stream Organisms 	Outside & Lab

Week #	Mo	Tue	We	Thu	Fri	Lab Exercises/Activities	Location
11	11/4	11/5	11/6	11/7	11/8	<ul style="list-style-type: none"> • Atmosphere and Ocean Circulation <ol style="list-style-type: none"> 1. Fluid Behavior of Gas 5. Convection in the Atmosphere 6. Density Currents in the Ocean 11. Coriolis Effect • Succession on a Small Scale <ol style="list-style-type: none"> 3. Winogradsky Column Monitoring - Part A only • Formal Lab Report Electronic Submission Due (prior to beginning of lab) 	Lab
12	11/11	11/12	11/13	11/14	11/15	<ul style="list-style-type: none"> • Atmosphere and Ocean Circulation <ol style="list-style-type: none"> 7. Atmosphere Temperature and Humidity at the Surface • Survivorship in Populations <ol style="list-style-type: none"> 1. Human Data Collection 2. Comparison of Curves 	Outside & Lab
13	11/18	11/19	11/20	11/21	11/22	<ul style="list-style-type: none"> • Simulated Mark-Recapture <ol style="list-style-type: none"> 1. Simple Mark-Recapture 2. Repeated Mark-Recapture • Predator-Prey Interactions <ol style="list-style-type: none"> 1. Learning the Rules of the Community 2. Coyotes Go Hunting 	Lab
14	11/25	11/26	11/27	11/28	11/29	<ul style="list-style-type: none"> • NO LABS - THANKSGIVING WEEK 	Not applicable
15	12/2	12/3	12/4	12/5	12/6	<ul style="list-style-type: none"> • Succession on a Small Scale <ol style="list-style-type: none"> 3. Winogradsky Column Monitoring - Part B only • Microevolution Simulation <ol style="list-style-type: none"> 1. No Natural Selection 2. Natural Selection • Graded Formal Lab Report Available On-Line 	Lab

The End