

General Research Syllabus Fall 2013
Coordinator: Angela Whittom Reiken, Ph.D.

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PLEASE CHECK YOUR MC EMAIL FREQUENTLY

General Course Information:

Credit: 1-6 hours

Time: TBA

Prerequisite: Permission of instructor.

Catalog Course Descriptions:

BIO 442 - Special Topics: Credits, 1 sem. hr. *Prerequisite(s): three semesters of biology and instructor's consent.* Lecture/Lab/Field/Meeting: One hour per week of integrated lecture, laboratory, and field experience. Selected topics in field biology or natural history.

BIO 443 - Special Topics: Credits, 1 sem. hr. *Prerequisite(s): three semesters of biology and instructor's consent.* Lecture/Lab/Field/Meeting: One hour per week of integrated lecture, laboratory, and field experience. Selected topics in field biology or natural history.

BIO 451 - Independent Studies and Research: Credits, 3 sem. hrs. *Prerequisite(s): junior or senior standing and departmental permission.* Individual reading and research involving experimental or theoretical investigations; for students not enrolled in Honors Program.

BIO 452 - Independent Studies and Research: Credits, 3 sem. hrs. *Prerequisite(s): junior or senior standing and departmental permission.* Individual reading and research involving experimental or theoretical investigations; for students not enrolled in Honors Program.

BIO 6460 - Independent Studies and Research: Credits, 1 sem. hr.

BIO 6461 - Independent Studies and Research: Credits, 2 sem. hrs.

BIO 6462 - Independent Studies and Research: Credits, 3 sem. hrs.

Course Location & Times:

Medical Sciences Building 221; varies with some mandatory lab meetings.

Instructor:

Angela A. Reiken, Ph.D., Assistant Professor, Department of Biology
Medical Sciences Building 216, (601) 925-7783, reiken@mc.edu

Prerequisite(s):

Instructor's consent.

Rationale:

The purpose of the research course is to prepare science students to design and carry out experiments to answer research questions while mastering necessary skills to perform experiments. This course involves proper usage of data analysis, interpretation of data, and presentation of results. Students should learn how science works, gain an appreciation of research as a means to find explanations for aspects pertaining to the world from a scientific perspective, understand the contexts of science, and utilize this understanding as a basis for ethics and future decisions consistent with the values of Mississippi College.

Methods of Instruction, Required Practices, and Instructional Materials:

- Methods of instruction include lab meeting with discussion format with content specific to syllabus, notebooks, information research, safety, skills, designing experiments, collecting and analyzing data, writing scientific reports, and preparing presentations. There will be practical hands-on training demonstration by the instructor.
- Required practices include students applying and practicing skills in the lab during experimentation, participation in team experiments, managing collection and analysis of data in a personal laboratory notebook, following safety and related procedures, reading, writing a scientific report, and preparing and presenting oral presentations.
- Instructional materials include instructional videos, scientific papers, laboratory equipment, computer, marker board, and handouts.

Student Objectives and Outcomes:

Upon the completion of this course you will be able to:

- Understand peer-reviewed scientific papers
- Learn various scientific techniques related to a project
- Perform and trouble shoot experiments
- Collect and critically evaluate data
- Present finding in written report and oral formats

Methods of Evaluation:

- Lab notebook – it is imperative that you keep a complete and accurate lab notebook that is updated on a daily basis. This notebook should include methods, results, and any other information that is pertinent to the experiment. A rubric for notebooks will be provided prior to beginning experiments.
- Students will work individually and with others to complete experiments. You and your team member will work cooperatively while each is expected to contribute equally to your section of the project. Each team member will be graded on an individual basis. The student team will present the instructor with an experimental plan schedule agreed upon and signed by each team member. A team member not completing his/her portion of the plan will not negatively affect the grade of other team members. Please note that if this occurs, the experiment may have to be repeated in full for that team member to obtain data for his/her portion of the work. This will not be the responsibility of the other team members!
- Lab meetings – Since one of the best ways to learn science is by discussing it with our peers, we will meet often. We will discuss designing experiments, techniques, data analysis, writing reports, and related scientific papers. You must attend at least 1 meeting for each credit hour you are registered. Students will present the instructor with a schedule of their availability by the end of week 1 so that lab meetings may be scheduled to accommodate variable student schedules. Some training meetings with the instructor will be mandatory. Inform the instructor in advance if a mandatory meeting cannot be accommodated by your class schedule so that arrangements can be made. Be prepared to participate.
- Participation- see Attendance section below
- Scientific report and oral presentation– these are due at the end of the summer and will serve as your final means of evaluation
- There are no formal exams for this course. Assignments utilized for evaluation must be completed on time. See the class schedule at the end of this syllabus. If you miss completing an assignment on time, you must notify the instructor immediately and provide a medical, family emergencies, school/job interview, or other valid excuse and make up the work within 1 week. Failure to do so will negatively affect your grade.

Attendance:

Each semester hour of credit corresponds to 53+ clock hours. For example, for a 3 credit course, you are expected to complete at least 160 clock hours during the term. This is a minimum. You're always welcome complete more clock hours! However, accruing less than 160 clock hours for a 3 hour course, 106 for a 2 hour course, or 53 for a 1 hour course will negatively affect your grade. For a full semester, the average is 10 hours per week for a 3 hour course, 6-7 for a 2 hour course, or 3-4 hours for a 1 hour course. You may be in the lab more or less than an average number of hours per week as long as you complete your required hours for the full term. Please note that the scientific report and oral presentation due at the end of the summer are required, even if you have already completed your clock hours.

Writing Center:

The Mississippi College Writing Center, supervised by Dr. Steve Price, offers writing consultations free-of-charge to MC students. The Center is staffed by highly-qualified undergraduate tutors who conduct interactive, one-on-one sessions with students of all disciplines. The goal is to help writers at any stage of their writing process, from choosing topics to organizing their thoughts, from deep revision to grammar. To schedule an appointment, drop by the LRC area on the first floor of the Leland Speed Library; call 601.925.7289; or email WritingCenter@mc.edu. Walk in visits are also available.

Grading:

YOUR FINAL GRADE WILL BE LOWERED BY A PERCENTAGE OF POINTS RELATIVE TO THE REQUIRED HOURS YOU DO NOT COMPLETE. FOR EXAMPLE, A STUDENT TAKING A 3 HOUR COURSE MUST COMPLETE 160 CLOCK HOURS. IF THAT STUDENT IS 16 HOURS SHORT, THAT IS 10% OF THE HOURS AND THEIR FINAL GRADE FOR THE COURSE WILL BE LOWERED BY 10%. FOR A 100 AVERAGE, THE GRADE WILL BE LOWERED TO 90, ETC. SEE ATTENDANCE SECTION!

Midterm Evaluation

Each area is scored on a scale of 1-10. For the given scale, 10 is the highest score and 0 is the lowest score. The scores will be added and the total will determine the midterm evaluation grade.

- satisfactorily completed the work they were assigned to do
- had reliable attendance
- prepared by doing adequate preliminary research
- understood the purpose/hypothesis of the research
- used sources made available
- asked for assistance when needed
- used a reliable system to record data
- followed protocols and safety procedures
- developed skills to perform required experiments
- worked successfully as an individual or as part of a team

Final Evaluation

Each area is scored on a scale of 1-5. For the given scale, 5 is the highest score and 0 is the lowest score. The scores will be added and the total will determine the final evaluation grade.

- satisfactorily completed the work they were assigned to do
- had reliable attendance for lab work
- had reliable attendance for lab meetings
- prepared by doing adequate preliminary research
- understood the purpose/hypothesis of the research
- used sources made available
- asked for assistance when needed
- used a reliable system to record data
- followed experimental protocols
- developed skills to perform required experiments
- worked successfully as an individual
- worked successfully as part of a team
- presented research in *oral, poster, or written form
- properly collected data
- critically evaluated data
- understood and utilized peer-reviewed scientific papers
- properly recoded work in lab notebook
- followed procedures for safety, organization, and cleanliness
- participated in paper discussions
- completed an acceptable scientific data and analysis report

*Graduate students: Each graduate student will be required to give an oral presentation about their research topic(s) that will include scientific data and analysis.

Final grade for the course

The midterm evaluation will be 25% and the final evaluation will be 75% of the final grade reported in Banner for the course.

Undergraduate Grading Scale: 90-100% = A, 80-89% = B, 70-79% = C, 60-69% = D, and <60% = F.

Graduate Grading Scale: 90-100% = A, 85-89% = B+, 80-84% = B, 75-79% = C+, 70-74% = C, 60-69% = D, and <60% = F.

Academic Honesty:

You are members of an institution that is dedicated to scholarship and spiritual growth. This institution is part of the larger academic community, the foundation of which is based on personal honesty. The success of this community depends on the commitment of both students and faculty to this principle and therefore cheating and plagiarism cannot and will not be tolerated. More importantly, Mississippi College is dedicated to empowering its students to develop the skills necessary for “making responsible, moral choices,” and therefore, the University will accept nothing less than scrupulous honesty from its students. We will follow the University policy on Academic Honesty (Policy 2.19), which can be found in the student handbook, The Tomahawk, pp. 35-36. <http://www.mc.edu/publications/handbook/academic.pdf>

Special Accommodations at Student Counseling Services:

In order for a student to receive disability accommodations under Section 504 of the Americans with Disabilities Act, he or she must schedule an individual meeting with the Director of Student Counseling Services immediately upon recognition of their disability (if their disability is known they must come in before the semester begins or make an appointment immediately upon receipt of their syllabi for the new semester). The student must bring with them written documentation from a medical physician and/or licensed clinician that verifies their disability. If the student has received prior accommodations, they must bring written documentation of those accommodations (example Individualized Education Plan from the school system). Documentation must be current (within 3 years). The student must meet with SCS face-to face and also attend two (2) additional follow up meetings (one mid semester before or after midterm examinations and the last one at the end of the semester). Please note that the student may also schedule additional meetings as needed for support through SCS as they work with their professor throughout the semester. Note: Students must come in each semester to complete their Individualized Accommodation Plan (example: MC student completes fall semester IAP plan and even if student is a continuing student for the spring semester they must come in again to complete their spring semester IAP plan). Student Counseling Services is located in Alumni Hall Room #4 or they may be contacted via email at: mbryant@mc.edu or rward@mc.edu or by phone at [601-925-7791](tel:601-925-7791).

Important College Dates:

Monday September 2, 2013: Labor Day. No class.

Thursday September 5, 2013: Last day to drop the class with 100% tuition refund.

Monday-Tuesday October 7-8, 2013: Fall Break. No class.

Last day to drop a class is October 25, 2013 (zero tuition refund)

Wednesday – Sunday November 27- December 1: Thanksgiving holidays (all classes meet Monday November 25, all day classes meet but night classes do NOT meet Tuesday November 26)

Lab Attire:

Since our research labs are BSL-2, **we are responsible** for requiring the use of the appropriate personal protective equipment. These items include the use of closed-toe shoes and lab coats. Lab coats must be mid-thigh length (not short coats). They may be purchased in Jackson at TCs or UMC or ordered online (if you order it online, please note that you may not begin work until you have a lab coat—you may borrow one from a friend, if necessary).

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(on UMC's Campus)

<http://umcbookstore.com/>

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[\(601\)981-9274](tel:6019819274) or [\(800\)981-9274](tel:8009819274)

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sales@tcsums.com

Hours: Monday - Friday 8:00am - 5:30pm

Saturday 9:00am - 5:00pm

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ONLINE RESOURCES

Amazon has some for as low as \$10

<http://www.amazon.com>

Just labcoats

<http://www.justlabcoats.com>

