WESTERN KENTUCKY UNIVERSITY.

Department of Public Health

Environmental and Occupational Health Science

PH 501 – Research Methods

Professor:

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Department of Public Health
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Website: Course Website on Blackboard

Office Hours, Appointments, and Class Meetings:

- Dr. Taylor maintains office hours each semester.
- Arrange an appointment at a class session, by Email or call Dr. Taylor to set up an appointment or conference call.
- Class meetings will occur throughout the semester as shown in Topnet. Make sure you are aware of these dates.
- Additional non-mandatory meetings may be provided to assist students with course material, research, and assignments.

Course Description:

This course provides students with an introduction to research methods in the health sciences, with emphasis in environmental and occupational health science. The course is designed for students with little or no prior academic coursework in this area. Course content will be especially useful for students contemplating a thesis, research project, or capstone.

Course Objectives:

Students will:

1. Explain principles of research methods.

2. Argue concepts of health science research, based on course readings and information.
3. Compare research methods used to investigate health science problems.
4. Examine the research components of journal articles, projects, and technical reports.
5. Formulate research questions, hypotheses, and goals/objectives for health science problems.
6. Create an annotated bibliography.
7. Develop a literature review.
8. Design a budget to meet planned research goals and objectives
9. Author a proposal to conduct research on a specific health science problem.
10. Communicate a proposal of a specific health science problem using public speaking.

Course Credit:

Three (3) hours of college credit at the graduate level.

Course Format:

✦ Face to face class meetings
✦ Lecture
✦ Exercises
✦ Experiential learning: field labs and/or field trips
✦ Web enhanced through Blackboard
✦ Review of research literature
✦ Face to face discussions and Blackboard Discussion Board participation
✦ Quizzes and exams
✦ Research proposal
✦ Student presentations

Course Calendar:

- Review the course outline below for in class meetings.
- The list of tasks for each section on Blackboard will serve as the calendar for the course and the list of tasks you need to complete. When a section is posted the list of tasks can be found under the Section folder in Blackboard.
- Complete each task by the due date given.
- Each section will be completed before another is posted on Blackboard.

Course Outline:

- **Introduction**
  - o Introduction
  - o Syllabus review
  - o In class Open Space Discussion
    - ▪ What is research?
    - ▪ How is research important to your education in Environmental and Occupational Health/Public Health?
    - ▪ How important is the ability to conduct research to your future career?
  - o Review of Chapter 1
  - o Critical Thinking Discussion - What would you tell your governor is the greatest health problem facing the citizens of your state today? How would you accumulate evidence to support your contention?
- **Section 1: Research and Practice**
  - o What is evidence based practice?
  - o What is research?
  - o Public Health, Environmental Health, and Environmental Science Research
  - o Research and Policy
  - o Review of Practical Application
    - ▪ The Research Question
    - ▪ The Research Proposal
  - o Discussion: Blackboard
  - o Exercises
    - ▪ Near Your Home: Discovering a research problem
    - ▪ Research questions, hypotheses, and research map
  - o Quiz
- **Section 2: Framing a Research Question**
  - o What is a Literature Review?
  - o Assessing Research Gaps
  - o The Four-Step Method
  - o Secondary Research, is it Useful?
  - o The Research Question is the Guide
  - o Discussions: In class and Blackboard
  - o Exercises
    - ▪ Literature review table: minimum six references on a chosen topic
    - ▪ Annotated Bibliography
    - ▪ Ethics case study
  - o Quiz
- **Section 3: Ethical Standard for Practice and Research**
  - o Why is History Important?
  - o Issues of Ethics in Human Subjects Research

- o Autonomy, Justice, and Beneficence
- o What are the Various Types of IRB Committee Reviews?
- o Data Security Options
- o The IRB Application
- o Become CITI Trained
- o AIHA and other Organizations
- o Discussions: Blackboard
- o Exercise
  - ▪ CITI Training Certificate
  - ▪ WKU IRB Application: Filing the IRB Application
- o Quiz
- **Section 4: Community Based Participatory Research**
  - o The Essentials of CBPR Research
  - o Nine Principles of CBPR
  - o CBPR vs. Traditional Research vs Applied Research
  - o Building a Coalition
  - o Discussion: Blackboard
  - o Exercise: Defining a CBPR Approach to Research
- **Section 5: Research Methods in Public and Environmental Health**
  - o Qualitative Methods
  - o Quantitative Methods
  - o Observational Research Study Designs
  - o Exercise: Defining a Study and Outlining the Methods with a Mind Map
- **Section 6: Experimental and Quasi-Experimental Designs for Public Health**
  - o Internal Validity
  - o Difficulties that May Arise
  - o Randomized Controlled Design
  - o Matched Pairs
  - o Nonequivalent Groups
  - o Control Groups
  - o Other Designs
  - o Exercise: COVID-19 and Testing the Vaccine
- **Section 5: Research Proposal**
  - o Review of WKU graduate school proposal requirements
  - o Outline of a research project
  - o Project timeline
  - o Developing a project budget
  - o Exercies
    - ▪ Review the WKU graduate school proposal requirements
    - ▪ Proposed research topic
- **Section 5: Evaluation and Epidemiologic Research**
  - o Discussions
  - o Exercise
  - o Quiz

- **Section 6: Sampling Designs and Techniques**
  - o Discussions
  - o Exercise
  - o Virtual Field Trip: Watershed Health Assessment and Research
    - ▪ Stormwater permit
    - ▪ Watershed health
    - ▪ Research and sampling
  - o Draft WKU research proposal
- **Section 7: Analyzing and Interpreting Data**
  - o Discussions
  - o Exercises
  - o Research proposal data analysis plan
  - o Quiz
- **Section 8: Data Presentation and Communicating Your Research**
  - o Discussions
  - o Final WKU research proposal
  - o Research proposal presentation
- **During Final Exam Time**
  - o **Student research proposal presentations – Through Zoom**
    - ▪ **10 minute (maximum with questions – 7 minutes for presentation and 3 minutes for questions) oral presentations at Research Methods Symposium or Research Methods Poster Symposium Session in WKU Department of Public Health**

Required Texts and Materials:

Crosby, R.A. and L.A. Salazar. 2020. Essentials of Public Health Research Methods. Jones and Bartlett Learning, LLC. Burlington, MA. 243 pp. (ISBN: 978-443-5000)

   Other texts and readings will be provided through the course Blackboard site.

Online Resources:

- Course Web Site: use the WKU blackboard website to access course tasks, materials, discussions, quizzes, assignments, and information.
- You will need access to the WKU Blackboard course site via an internet connection – student labs are available on campus.
- Please check the course Blackboard site and your WKU email for messages.
- Additional course materials will be provided through Blackboard and in class.

Expectations and Important Information:

- Please review the course outline and check the tasks for each section to determine what needs to be completed for each section. The task list for each section can be found under "Course Documents" and then select the Section that is under study.
- All tasks to be completed will be posted under the task list in each section on Blackboard. This will allow you to determine what tasks you have and have not completed.
- Assignments for a Section will be posted under the "Assignments" folder for that section. All quizzes and tests will be posted under the "Test" folder for that section. The final project will be posted under "Course Documents" in the "Final Project" folder. Discussion questions will be posted under the "Discussion Board".
- You must complete all assignments, quizzes/tests, and the final project by the due date and time.
- Do not wait until the last minute to ask a question or upload a file pertaining to an assignment or the final project. If you have problems please post a question to the discussion board or call me on my cell phone.
- Access to course assignments, tests, activities, and projects will be through Blackboard.
- All assignments will have a due date and you will be expected to submit these through Blackboard.
  1. For each assignment there will be a link under the Assignments folder for that section.
  2. You will need to download the assignment document, complete your work, and then submit your completed assignment through the link for that assignment.
  3. Always save your work on your computer or storage media. Also, save a backup on a disc or thumb drive. Additionally, you can save a copy to Blackboard.
  4. Please note, once you submit an assignment you will not be able to go back and work on that assignment. You can save your work under each assignment by selecting the "Save" button under the link for a particular assignment. However, you must select the "Submit" button to turn in your work. If you accidentally select "Submit" before your assignment is completed you must post that you have done this on the Course Questions discussion and Dr. Taylor will clear the attempt. Just remember that this will delete your work that was saved on Blackboard. So you must have a backup on your computer or elsewhere.
  5. Alternatively, you can save your document on blackboard and access it until complete, then submit when you are finished.
- All Quizzes will be on-line. Quizzes and tests may be T/F, multiple choice, matching, essay and other formats. Quizzes and tests will be graded through the Blackboard system.
  1. Some quizzes and tests may allow multiple attempts (up to three).
  2. All quizzes and tests will be for a specified time period.
  3. All quizzes and tests are open note and open book.

4. All quizzes and tests are expected to be completed by the student enrolled in the class. If it is determined that a student has cheated on an exam, a failing grade will be given at a minimum.
- Required assignments and projects will be completed and submitted through the Blackboard system.
- Plagiarism will not be tolerated. You are expected to do your own work and cite all references. All papers will be evaluated for plagiarism using a computer tool. Do not copy the work of another student. If you are found to be plagiarizing there will be serious consequences, such as a failing grade in the course. University policy will be followed. Copying a paper of another student or directly from a source will result in a failing grade.

Course Requirements and Points:
- Quizzes – 20% of final grade – 200 points possible
- Class exercises and discussions, including in class and online discussions – 40% of final grade – 400 points possible
- WKU Graduate School Research Proposal on an Environmental and Occupational Health/Public Health topic: Each student will complete a research proposal. The grade for the proposal will include completing an outline, timeline/research map, budget, draft proposal, final proposal, and presentation. A final presentation will be completed that highlights the proposal. This presentation will be a maximum of 15 slides and a 10 minute presentation, unless a poster session is required. - 40% of final grade – 400 points possible
- 1000 points total

    Notes:
    o Environmental Toxicology Case Studies will be a series of components or phases that will be submitted separately throughout the semester.
    o Course outline above shows items required for each section.

Course Grading:
★ All assignments will be given a due date.
★ Late assignments will not be accepted.
★ Assignments can be submitted prior to the class meeting via email or turned in on the due date.
★ Assignments will be graded within one week of completion
★ Grade Scheme
    a. A = 895 points or greater
    b. B = 894 to 795
    c. C = 794 to 695
    d. D = 694 to 595

e. F = 594 or less

Syllabus Changes:

The professor reserves the right to make syllabus changes, dependent upon the needs of the class. For example, the class may dictate only two exams and more emphasis on applied environmental toxicology research.

Attendance Policy:

You will be expected to review all materials, complete assignment, tests, and the final project. The Blackboard site will be checked for your participation. Assignments and completion of tests will be taken as your participation.

WKU Policy on Plagiarism:

To represent ideas or interpretations taken from another source as one's own is plagiarism. Plagiarism is a serious offense. The academic work of students must be their own. Students must give author(s) credit for any source material used. To lift directly from a source without giving credit is a flagrant act. To present a borrowed passage after having changed a few words, even if the source is cited, is also plagiarism.

Note that you will be required to cite all references in your coursework or in your assignments. All assignments and work will be checked for plagerism. If you copy material from the internet, a book, or elsewhere, it will be discovered. One incident of copying information and using it as your own will result in a failing grade for the assignment or work. Two or more cases of plagiarism will result in a failing grade for the course and possible academic repercussions according to WKU's policy.

WKU Policy on Cheating:

No student shall receive or give assistance not authorized by the instructor in taking examinations or in the preparation of an essay, laboratory report, problem assignment, or other project that is submitted for purposes of grade determination.

WKU COVID-19 Statement for Face Coverings

Out of respect for the health and safety of the WKU community and in adherence with the CDC guidelines, the University requires that a cloth face covering (reusable or disposable) that covers both the nose and mouth must be worn at all times when in public areas within all buildings. Students must properly wear face coverings while in class regardless of the room size or the nature of the classroom activities. Students who fail to wear a face covering as required will be in violation of the WKU Student Code of Conduct and will be asked to comply or will face disciplinary action, including possible dismissal from the

University. Accommodations to face coverings must be determined by the Student Accessibility Resource Center and documented before a student may attend class.

WKU ADA Accommodation

In compliance with University policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, Room 1074. The SARC can be reached by phone number at 270-745-5004 [270-745-3030 TTY] or via email at sarc.connect@wku.edu. Please do not request accommodations directly from the professor or instructor without a faculty notification letter (FNL) from The Student Accessibility Resource Center.

WKU Title IX – Discrimination and Harassment

Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's Title IX Sexual Misconduct/Assault Policy (#0.2070) and Discrimination and Harassment Policy (#0.2040). Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Title IX Coordinator, Andrea Anderson, 270-745-5398 or Title IX Investigators, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121.Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are "Responsible Employees" of the University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's Counseling and Testing Center at 270-745-3159.

Important Links to Review

https://www.wku.edu/syllabusinfo/