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| **MISPH_Full Color** | Department of Epidemiology  **PubH 6280.10**  **Public Health Microbiology and Emerging Infectious Disease Final Project (2 Credits)**  For more information, please visit:  [**http://publichealth.gwu.edu/departments/epidemiology-and-biostatistics/practice-experience**](http://publichealth.gwu.edu/departments/epidemiology-and-biostatistics/practice-experience) |

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The **Final Project** is a credit/no credit course which consists of four elements that focus on the synthesis and summary of data acquired through epidemiologic and/or public health laboratory research. The four elements are: (a) Concept Paper, (b) Proposal, (c) Final Report, and (d) two Oral Presentations (one at the site, and a final presentation evaluated by GW Faculty). These elements are fully described in the Appendix – Guidelines for Final Project Elements.

MSPHMEID students are required to demonstrate proficiency in the application of the skills they acquire during their academic programs through the **Field/Laboratory Experience** (PubH 6016.10) and the **Final Project** (PubH 6280.10). The two courses can be linked but this is not a program requirement. In addition, they can be taken simultaneously or sequentially, in which case the Field/Laboratory Experience would come first.

*Course Prerequisites*

 PubH 6002 Biostatistical Applications for Public Health

 PubH 6003 Principles and Practice of Epidemiology

 PubH 6291/MICR 8210 Infection and Immunity

 PubH 6245 Infectious Disease Epidemiology

*Co-Requisites*

 PubH 6047 Design of Health Studies

 PubH 6249 Use of Stat Packages for Data Management/Data Analysis

 PubH 6016.10 PHMEID Field/Laboratory Experience

*Other Recommended Courses*

* MICR 6292 Tropical Infectious Diseases (if the student wishes to complete their Field/Laboratory Experience in an international setting)

*Other prerequisites*

* Students must complete the GWU Biosafety training course (chemical hygiene component) during the spring semester of their 1st year of matriculation
* Students must take the online training courses relating to research with human subjects (CITI) and personal health information (HIPAA)
* Students must have participated in the Department of Epidemiology and Biostatistics mandatory Field/Laboratory Experience orientation
* If applicable, students must have submitted IRB paperwork before participating in the Field/Laboratory Experience

*Student responsibilities*

1. Before registering for the Final Project, students should talk to the Course Director to discuss their plans and interests.

2. The first step in the Final Project is identification of a topic of study. In some cases students work on a topic during the Field/Laboratory Experience that can be linked and continued to fulfill the requirements of the Final Project. At other times they may decide to choose a new topic.

3. The first requirement of the Final Project is the development of a concept paper which describes the work that will be done and how it will be carried out. (See Appendix for Concept Paper template)

4. The Concept Paper is reviewed and approved by the Site Preceptor and GW Faculty Advisor to assess the appropriateness of its scope as well as its feasibility.

5. Once the Concept Paper is approved, the student expands the Concept Paper into a Proposal which requires the approval of the GW Faculty Advisor and Site Preceptor. (See Appendix for Proposal guidelines)

6. **Student Project Oversight**

* All students participating in projects related to school requirements (dissertation, MPH culminating experience (CE), MPH Practicum, Biostatistics Consulting Practicum, Field Lab Experience, independent study, etc.) require oversight of their projects. This is not only for human protection / IRB reasons but also so the Department can monitor what types of projects are being conducted by students and ensure proper oversight.
* Before beginning any school project involving seeing or handling data derived from humans, students must complete the determination process and have a determination about next steps made.
* Student requirements for project oversight are not always the same as faculty requirements. For example, certain types of studies may be considered non-human subjects research (NHSR) for faculty but due to their sensitive subject area, exempt review is required for students.
* Approval for the project itself is not implied by the completion of the determination project; students still need to work with faculty and staff to ensure the project is approved and meets academic requirements.
* It is the faculty advisor’s responsibility to ensure that students have a determination on file for projects that meet academic program requirements. Students cannot begin their projects until process is completed. Faculty advisors are ultimately responsible for each of the students that they advise on research projects.

**Process**

* Once Practicum Director (PD) approves practicum plan, they will advise student to complete the Student Project Oversight form here: <https://cri-datacap.org/surveys/index.php?s=T3783HC8Y4>
* Final determinations will be sent to the student, faculty advisor, and PDs
* RTF forms for the Practicum, CE, Field Lab Experience, Final Project, or Independent Study, students will not be approved until a determination has been made and all relevant approvals are in place.

**NOTE: For more information, please consult the Student Project Oversight Process on the DEB Practicum-CE Resource page**.

7. Students should submit their Concept Paper, Proposal, and IRB Determination Form

as soon as possible. Once the Concept Paper and Proposal are approved copies should be submitted to the Course Director.

8. Students will produce a Final Report which expands on their Proposal by including their results and discussion. (See Appendix for guidelines for the Final Report) The GW Faculty Advisor must receive a near final draft of the complete report four weeks before the student intends to make their Oral Presentation.

9. Once the GW Faculty Advisor and Site Preceptor give authorization, the student works with their GW Faculty Advisor and Final Project Course Coordinator to schedule the Oral Presentation. Students are encouraged to invite their Site Preceptors to their Oral Presentations.

10. Students must provide the GW Faculty Advisor with a copy of their PowerPoint presentation two weeks before the scheduled date of their Oral Presentation. (See Appendix)

11. Each student is required to make and Oral Present to their site preceptor (if they are working in the field) and/or GW Faculty Advisor previous to the actual final Oral Presentation.

*Deliverables*

As they progress through the Final Project, students are required to provide the course director with electronic copies of the final versions of the Concept Paper, Proposal, Final Paper and Oral Presentation so that these can be saved in the students’ electronic folders.

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| Course Objectives – Upon completion of the course, students will be  able to: |
| 1. Identify and assess patterns of emerging infectious diseases to postulate hypotheses and to identify appropriate strategies in order to evaluate the impact of health problems. |
| 2. Enumerate and apply underlying principles and methods to  design, plan, and conduct epidemiologic studies including observational and experimental designs, screening programs, public health surveillance, and other epidemiologic designs. |
| 3. Apply epidemiological and biomedical public health laboratory concepts in identifying and describing the determinants and the distribution of infectious diseases in human populations. |
| 4. Synthesize data and relevant literature to interpret findings in a  causal framework, write manuscripts, and make oral presentations. |

**Required Texts**

None. Students will conduct relevant research to inform their Final Project.

**Key Definitions – Course Participants**

**Students** – Students identify and develop a topic applying and integrating the knowledge and skills they have obtained through epidemiologic research or surveillance data. At times this data comes from the student’s Field/Laboratory Experience.

**Site Preceptor** – The individual in the field who supervises the student’s work and provides input to the GW Faculty Advisor on the student’s performance, through an evaluation.

**GW Faculty Advisor** – A member of the GW SPHHS Department of Epidemiology and Biostatistics faculty who works with the student throughout the process to ensure that the student’s project and work meet Departmental standards. The GW Faculty Advisor is responsible for portions of the student’s final evaluation and grade.

**Final Project Course Director**– guides student through Field/Laboratory Experience-Final Project process.

**Method of Instruction**

|  |  |
| --- | --- |
| Lectures  Case Studies  Required Readings/Textbook  Recommended/Supplemental Readings | Class and Small Group Discussions  Student Presentations  Other Field Lab Research  Other [Specify] |

Students are actively involved in the integration of knowledge and skills gained in their MSPHMEID program under the supervision of the Site Preceptor and the GW Faculty Advisor. The student’s progress in accomplishing the four basic elements of the course is tracked with the use of the Student Checklist, which assists students by outlining the specific steps needed to complete the Field/Laboratory Experience and Final Project. The Student Checklist is available on the Field/Laboratory Experience and Final Project Resource Page:

https://publichealth.gwu.edu/practice-experience-ms-phmeid

**Methods of Evaluation**

Students will be assessed on how well they accomplish the objectives for the Final Project through the evaluation of their (a) Concept Paper, (b) Proposal, (c) Final Report, and (d) Oral Presentation. The Site Preceptor completes an evaluation of the student’s performance. The GW Faculty Advisor also contributes to the final grade, as do Faculty attending the students’ presentations.

**Grading Scale**

This is a credit/no credit course. Students will be assessed and graded on how well they accomplish the objectives for the

Final Project through the evaluation of the following elements:

• Concept Paper and Proposal –25%

• Final Report – 35%

• Oral Presentation – 20%

• Final evaluation – 20%

Each of the required elements will be evaluated separately by the GW Faculty Advisor and the Site Preceptor. The Oral Presentation will be evaluated based on feedback from the GW Faculty Advisor and Departmental faculty attending the final presentation.

The rating scale is as follows:

1 = unacceptable

2 = poor

3 = acceptable

4 = good

5 = excellent

To receive credit, a student must have a score of 3 or more in at least 3 of the evaluation categories.

The table below shows the overall and proportional contribution of the GW Faculty Advisor, Site

Preceptor and Field/Laboratory Experience Director/GW Faculty in calculating the student’s final grade for the FP.

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| --- | --- | --- | --- | --- |
| **Element** | **Overall Proportion of Grade** | **GW Faculty**  **Advisor (%)** | **Site Preceptor (%)** | **Field/Laboratory Experience Director/GW Faculty in attendance (%)** |
| FP Prep: Concept Paper,  Proposal, IRB  submission, if applicable | 25% | 15 | 10 | -- |
| Final Report | 35% | 25 | 10 | -- |
| Oral Presentations | 20% | 10 | 0 | 10 |
| Final evaluation | 20% | 10 | 10 | -- |
| **Total** | **100%** | **60** | **30** | **10** |

**Class Policy: Attendance/Participation**

This is not a classroom experience but one where students work semi-independently, under the

supervision of their preceptor and GW Faculty Advisor.

**Academic Integrity**

All Milken Institute School of Public Health Students are required to complete two (separate) online activities regarding academic integrity -- the GW Academic Integrity Activity and the Identifying and Avoiding Plagiarism Activity.  Both activities must be completed within 2 weeks of starting your coursework at Milken Institute School of Public Health. - See more at:[**https://publichealth.gwu.edu/integrity#sthash.FlIRdO5H.dpuf**](https://publichealth.gwu.edu/integrity#sthash.FlIRdO5H.dpuf)

Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information. Common examples of academically dishonest behavior include, but are not limited to, the following: cheating; fabrication; plagiarism; falsification and forgery of University academic documents; facilitating academic dishonesty. For the remainder of the code, see <https://studentconduct.gwu.edu/code-academic-integrity>.

**Workload**

This is an individualized course where students are learning through public health practice or research. Students are expected to put in a minimum of 120 hours over the course of a semester, which works out to a minimum of 9 hours a week.

**University Policy on Religious Holidays**

* Students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance.
* Faculty should extend to these students the courtesy of absence without penalty on such occasions, including permission to make up examinations.
* Faculty who intend to observe a religious holiday should arrange at the beginning of the semester to reschedule missed classes or to make other provisions for their course-related activities.

**Blackboard**

Black board is not used for this course.

**Academic Integrity**

All Milken Institute School of Public Health Students are required to complete two (separate) online activities regarding academic integrity -- the GW Academic Integrity Activity and the Identifying and Avoiding Plagiarism Activity.  Both activities must be completed within 2 weeks of starting your coursework at Milken Institute School of Public Health. - See more at:[**https://publichealth.gwu.edu/integrity#sthash.FlIRdO5H.dpuf**](https://publichealth.gwu.edu/integrity#sthash.FlIRdO5H.dpuf)

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**Support for Students Outside the Classroom**

**Disabilities Support Services (DSS)**

Any student who may need an accommodation based on the potential impact of a disability, should contact the Disability Support Services office at 202.994.8250 in the Rome Hall, Suite 102, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: <https://disabilitysupport.gwu.edu/>

**Mental Health Services-** 202-994-5300

The University’s Mental Health Services offers 24/7 assistance and referral to address students’ personal, social, career, and study skills problems. Services for students include: crisis and emergency mental health consultations, confidential assessment, counseling services (individual and small group), and referrals. <https://counselingcenter.gwu.edu/>

**Adverse Weather/Class Cancellation**

In the advent of inclement weather or any other emergency, the Milken Institute School of Public Health will follow the decision of the University. Call the University hotline at 202.994.5050 or check the Human Resources status button at http://hr.gwu.edu/adverse-weather-conditions-and-emergency-situations. In the event of class cancellation, we will email you about rescheduling, assignments due, etc.

**Emergency Preparedness and Response Procedures**

The University has asked all faculty to inform students of these procedures, prepared by the GW Office of Public Safety and Emergency Management in collaboration with the Office of the Executive Vice President for Academic Affairs.

**To Report an Emergency or Suspicious Activity**

Call the University Police Department at 202-994-6111 (Foggy Bottom) or 202-242-6111 (Mount Vernon).

**Shelter in Place – General Guidance**

Although it is unlikely that we will ever need to shelter in place, it is helpful to know what to do just in case. No matter where you are, the basic steps of shelter in place will generally remain the same.

* If you are inside, stay where you are unless the building you are in is affected. If it is affected, you should evacuate. If you are outdoors, proceed into the closest building or follow instructions from emergency personnel on the scene.
* Locate an interior room to shelter inside. If possible, it should be above ground level and have the fewest number of windows. If sheltering in a room with windows, move away from the windows. If there is a large group of people inside a particular building, several rooms maybe necessary.
* Shut and lock all windows (for a tighter seal) and close exterior doors.
* Turn off air conditioners, heaters, and fans. Close vents to ventilation systems as you are able. (University staff will turn off ventilation systems as quickly as possible).
* Make a list of the people with you and ask someone to call the list in to UPD so they know where you are sheltering and who is with you. If only students are present, one of the students should call in the list.
* Await further instructions. If possible, visit GW Campus Advisories for incident updates (http://CampusAdvisories.gwu.edu) or call the GW Information Line 202-994-5050.
* Make yourself comfortable and look after one other. You will get word as soon as it is safe to come out.

**Evacuation**

An evacuation will be considered if the building we are in is affected or we must move to a location of greater safety. We will always evacuate if the fire alarm sounds. In the event of an evacuation, please gather your personal belongings quickly (purse, keys, GWorld card, etc.) and proceed to the nearest exit. Every classroom has a map at the door designating both the shortest egress and an alternate egress. Anyone who is physically unable to walk down the stairs should wait in the stairwell, *behind the closed doors*. Firemen will check the stairwells upon entering the building.

* Once you have evacuated the building, proceed to our primary rendezvous location: the court yard area between the GW Hospital and Ross Hall. In the event that this location is unavailable, we will meet on the ground level of the Visitors Parking Garage (I Street entrance, at 22nd Street). From our rendezvous location, we will await instructions to re-enter the School.

**Alert DC**

Alert DC provides free notification by e-mail or text message during an emergency. Visit GW Campus Advisories for a link and instructions on how to sign up for alerts pertaining to GW. If you receive an Alert DC notification during class, you are encouraged to share the information immediately.

**GW Alert**

GW Alert provides popup notification to desktop and laptop computers during an emergency. In the event that we receive an alert to the computer in our classroom, we will follow the instructions given. You are also encouraged to download this application to your personal computer. Visit GW Campus Advisories to learn how.

**Additional Information**

Additional information about emergency preparedness and response at GW or the University’s operating status can be found on GW Campus Advisories (http://CampusAdvisories.gwu.edu) or by calling the GW Information Line at 202-994-5050.

**Two Oral Presentations:**

All students are required to do a practice presentation of their PPT presentation for their site preceptor and/or their GWFA (if the GWFA is serving as site preceptor). The department will also schedule a time where students do practice presentations with a faculty member.

**Publishing your CE**:

Above and beyond the general CE criteria set forth by the Department of Epidemiology, we *strongly encourage* all students to consider publishing their CE as a manuscript in a peer-reviewed journal. Most importantly, being the first author on a published paper will be a tremendous learning opportunity for you and tangible evidence of your training in epidemiology. In addition, working on a manuscript together will allow your GWFA to spend more time with you to develop your epidemiologic analysis and writing skills. **At minimum, we ask that all final papers be formatted to reflect a standard journal article.** If you intend to submit your article for publication, plan to continue working on your paper for 6-10 weeks after submission.

**IRB Approval:**

You are responsible for working with your CE GW Faculty Advisor and your PD to go through the research determination process to determine whether your project requires IRB approval. All projects are unique and require individual scrutiny.

**If you are working with data or accessing any health records, you must ensure that you are allowed to access the data.** This **must** be done **prior to looking at, downloading, or analyzing any data!** There are several steps to go through:

* Ensure you are listed on the study/program in the agency where you are working and are covered by the agency’s rules regarding working with their data. Provide a copy of IRB (or other) approvals to PD.
* Once Practicum Director (PD) approves, they will advise student to complete the Student Project Oversight form here: <https://cri-datacap.org/surveys/index.php?s=T3783HC8Y4>
* Final determinations will be sent to the student, faculty advisor, and PDs
* RTF forms for the Practicum, CE, Field Lab Experience, Final Project, or Independent Study, students will not be approved until a determination has been made and all relevant approvals are in place.

**APPENDIX**

**Guidelines for Final Project Elements**

**1. Title Page**

A Title Page must be included with each of the written documents (Concept Paper, Proposal, and

Final Report) submitted to your GW Faculty Advisor, Site Preceptor, and through Blackboard. The proper format of the Title Page should be:

TITLE DATE

Protocol Approved by

The George Washington University Institutional Review Board IRB # (if applicable)

Submitted by: Student Name Contact Information

Preceptor Name

Contact Information

GW Faculty Advisor Name

Contact Information

In Partial Fulfillment of the Requirements for the Masters of Science Degree in Public Health Microbiology and Emerging Infectious Diseases

Department of Epidemiology and Biostatistics The George Washington University

School of Public Health and Health Services

2. **Concept Paper: 2-3 pages double-spaced (including references)**

Please follow this template by maintaining the headings of each section. If they are not applicable, please explain why.

a. Title Page: as above

b. Background: brief review of the literature, public health significance, and justification of need for the activity to be carried out (gaps in research area).

c. Scope: explicit statement of what will be done during the Culminating

Experience.

d. Principal Aims and Hypotheses: Clear statement of the principal aims and research hypotheses to accomplish these goals.

e. Methods: outline of the proposed analytic methods, including:

a. study design: Type of study or activity to be conducted (e.g. secondary data analysis, case-control study, laboratory epidemiology, or surveillance project).

b. data sources - defend adequacy in terms of the availability and quality of data; quantity of data

c. variables: principal independent and dependent variables, and potential confounders

d. statistical analysis methods

e. human subjects protection issues

f. Discussion: of the public health significance of the proposed project.

g. References

**3. Proposal: about 5-10 pages double-spaced pages**

The proposal represents an expansion of the approved Concept Paper. In addition to the above elements which should be described in greater detail, a scientific abstract using standard *New England Journal of Medicine* (*NEJM)* format should be included after the Title Page. It is understood that the abstract for the proposal will not contain results.

**4. Institutional Review Board (IRB) Review**

Students must work with their GW Faculty Advisor to decide whether the topic for a proposed Final Project must be submitted for IRB approval.

**If you are working with data or accessing any health records, you must ensure that you are allowed to access the data.** This **must** be done **prior to looking at, downloading, or analyzing any data!** Another example of a situation where IRB review might be required is if the student has been conducting research with the intent to publish.

There are several steps to go through:

Ensure you are listed on the study/program in the agency where you are working and are covered by the agency’s rules regarding working with their data. Provide a copy of IRB (or other) approvals to F/LE or Final Project Advisor.

* Once Practicum Director (PD) approves, they will advise student to complete the Student Project Oversight form here: <https://cri-datacap.org/surveys/index.php?s=T3783HC8Y4>
* Final determinations will be sent to the student, faculty advisor, and PDs
* RTF forms for the Practicum, CE, Field Lab Experience, Final Project, or Independent Study, students will not be approved until a determination has been made and all relevant approvals are in place.

The IRB is a committee mandated by federal law to protect the rights and welfare of human subjects participating in research activities. The IRB achieves its primary function, protecting the rights and welfare of subjects participating in research, by educating researchers.

Human Subject Research course requirements – please consult the SPHHS Student

Practicum Guidebook.

Other institutions with their own IRBs: Students will sometimes work with institutions other than GWU that have their own IRB. The general rule is that students still have to complete

an IRB submission for GW once the IRB used by the site has approved the project. Students should include the other IRB’s documentation of project approval.

For students conducting research at Children’s National Medical Center (CNMC), submissions are made directly to the CNMC IRB. There is no need for a submission to the GW IRB because there is an agreement between the two institutions and the CNMC IRB will notify the GW IRB of any submissions.

**5. Final Report Guidelines – about 18-20 double-spaced pages+**

The Final Report follows the outline of a published research paper, and represents an expansion of the Proposal. The goal of the final report is that it should be a manuscript of publication quality. It should include the following elements:

1. Title Page: as above
2. Abstract

c. Background: brief review of the literature, public health significance, and justification of need for the activity to be carried out (gaps in research area).

d. Principal Aims and Hypotheses: Clear statement of the principal aims and research hypotheses to accomplish these goals and objectives.

e. Methods: outline of the proposed analytic methods, including:

a. study design: Type of study or activity to be conducted (e.g. case-control study or surveillance project).

b. data sources - defend adequacy in terms of the availability and quality of data; quantity of data

c. variables: principal independent and dependent variables, and potential confounders

d. statistical analysis methods

e. human subjects protection issues

f. Results: what were the key study findings along with appropriate tables and graphs

g. Discussion: of the public health significance of the proposed project.

h. References

+ Tables and figures, references, and any appendices are not included in the 18-20 pagination limit

\*The abstract should follow the outline below using *NEJM* format with a word limit of 250 words:

a. Background/Objectives

b. Methods

c. Results

d. Conclusions

**6. Oral Presentation Guidelines**

Students are expected to prepare a concise, 15-minute oral presentation using PowerPoint slides. The basic outline of the talk should include a Title Slide, Background, Hypotheses and Objectives, Methods, Results, Summary and/or Conclusions, Recommendations, and Acknowledgments.

The number of slides presented should be limited to about 15, as each slide takes about one minute to present. Each presentation will be followed by a 5-minute question and answer session with Department faculty and other students.

At least two weeks prior to the scheduled presentation date, students must provide a copy of and review their PowerPoint presentation with their GW Faculty Advisor. The GW Faculty Advisor and Site Preceptor must authorize the student’s presentation by emailing the Final Project Course Coordinator.

The student must also provide an abstract of the written report to the Course Coordinator at least one week before the presentation is scheduled so that announcements can be made to Department faculty and students.