



School of Natural Sciences and Mathematics  
Department of Biological Sciences

## BI-312 Epidemiology and Public Health

Henry Hall 104 MWF 8:30A-9:20A  
Credits: 3    Section: 01    Term: Spring 2026

### Instructor Information



**Instructor:** Michael Weichhaus  
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**Phone:** 808.440.4386  
**Office Location:** Wesselkamper Science Center 107  
**Virtual Office Hours:** M/W/F 9:30A-11:00A;  
T/R 1:00P-2:00P  
**Sign-up for Office Hours** sign-up [here](#) for office hours (required)

### Communication

Instructions and updates will be given verbally during lectures and may also be distributed using the “announcement” feature in canvas. Questions for this course can be emailed to the instructor. Response to email can be expected within 24h but may take longer during weekends or holidays. Online and in person meetings are available during office hours and can be scheduled using this [link](#) to my calendar. Calendar Sign-up is required for scheduling purposes.

### School & Department Information

#### School of Natural Sciences and Mathematics

Office Location: Wesselkamper Science Center, room 115

Phone: (808) 440-4204

Website: <https://chaminade.edu/nsm/>

If you have questions regarding the Department of Biology, reach out to your instructor or the School of Natural Sciences and Mathematics.

## Course Description & Materials

### Catalog Course Description

Population based analysis of health and disease focusing on an understanding cause, risk and health determinants in populations and communities. This course covers epidemiologic concepts (including measures of association, bias, confounding, interaction, and determination of risk). Epidemiological methodology, including study design and study types, will be covered.

### Time Allocation

How This Course (3 credits) Meets the Credit Hour Policy

- Seat time
  - 35h (150min MWF for 15 weeks – 3 holidays)
- Instructional time:
  - Recorded lectures: 17h
  - Readings: 36h
  - Flashcards: 12h
- Time spent on key assessments, including study time:
  - Epiville assignments: 15h (10x1.5h)
  - Discussions: 12h
  - Age-Adjustment Exercise: 6h
  - Oswego Outbreak study: 6h
  - Quizzes: 15h (15x1h)
- Total engagement Time: 154h

### Required Materials

Navigate Advantage Access for Introduction to Epidemiology, Ninth Edition, Ray Merrill, ISBN: 9781284292954

Canvas (<https://chaminade.instructure.com/45007>)

You are enrolled in this course through canvas.

Canvas is the online learning management system (LMS) used in this course to facilitate various aspects of the class, including assignments, quizzes, and communication. It provides a centralized platform where students can access course materials, participate in discussions, submit assignments, and check grades.

In this course, Canvas will be specifically used for:

1. **Quizzes and Exams:** Students will complete quizzes, the midterm, and the final exam through Canvas, which allows for immediate submission and secure access.

2. **Assignment Submissions:** Projects, like the Epiville assignments and Oswego case study, will be uploaded and tracked through Canvas, helping streamline submissions and feedback.
3. **Communication:** Students can connect with the instructor and classmates via the Canvas messaging system for quick and convenient communication.

Canvas support is available 24/7, and students can also reach out to the Chaminade IT Helpdesk if any technical issues arise

Canvas student apps:

Apple: <http://apple.co/1wD5aok>

Android: <http://bit.ly/1ekgN4M>

## Learning Outcomes

### Program Learning Outcomes (PLOs)

Upon completion of the program in Biology, a graduating student will demonstrate the following competencies:

1. Explain fundamental biological concepts and their interrelationships across various levels of biological organization, from molecules to ecosystems, including cell biology, genetics, evolution, physiology, and ecology.
2. Perform laboratory, field and computational techniques relevant to biological research, including accurate data collection, analysis, and interpretation.
3. Design and conduct scientific investigations using advanced methodologies, technologies, and resources, and effectively communicate results to professional and lay audiences.
4. Make ethically informed decisions in biological research and practice, considering bioethics, environmental ethics informed by indigenous and traditional knowledge and practices.
5. Analyze societal challenges related to health and the environment through the lens of biological science, recognizing how biological knowledge and associated career paths can contribute to studying, addressing and solving these challenges.

### Course Learning Outcomes (CLOs)

Upon completion of BI312, the student will be able to:

1. Describe basic epidemiology terms and concepts
2. Identify types of data sources
3. Identify basic methods of data collection and interpretation
4. Describe a public health problem in terms of time, place, and person
5. Identify the key components of a descriptive epidemiology outbreak investigation

## Marianist Values

This class represents one component of your education at Chaminade University of Honolulu. An education in the Marianist Tradition is marked by five principles and you should take every opportunity possible to reflect upon the role of these characteristics in your education and development:

1. Education for formation in faith.
2. Provide an integral, quality education.
3. Educate in family spirit.
4. Educate for service, justice and peace, and integrity of creation.
5. Educate for adaptation and change.

This course in Epidemiology directly addresses several Marianist values, particularly through its focus on community health, ethical understanding, and adaptability in scientific inquiry. By examining real-world health issues and public health disparities, students engage in **education for service, justice, and peace**, developing a strong sense of responsibility toward promoting equitable healthcare solutions. The course cultivates **integral, quality education** by equipping students with critical analytical skills and methodological rigor necessary to understand, interpret, and act on epidemiological data, which aligns with Chaminade's commitment to fostering intellectual depth and applied knowledge. Additionally, students are encouraged to view their learning community as an 'ohana, embodying the Marianist value of **educating in family spirit**. This supportive environment emphasizes collaboration, where students learn to respect diverse perspectives and contribute to a shared goal of advancing public health. Through exploring the dynamic and evolving nature of epidemiology, students also gain skills to **adapt and change** in response to new challenges in the field, preparing them to address health inequities with compassion, integrity, and scientific precision.

## Native Hawaiian Values

Education is an integral value in both Marianist and Native Hawaiian culture. Both recognize the transformative effect of a well-rounded, value-centered education on society, particularly in seeking justice for the marginalized, the forgotten, and the oppressed, always with an eye toward God (Ke Akua). This is reflected in the 'Olelo No'eau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua ('Olelo No'eau 364) May I live by God.
2. Provide an Integral, Quality Education (Na'auao) Lawe i ka ma'alea a kū'ono'ono ('Olelo No'eau 1957) Acquire skill and make it deep.

3. Educate in Family Spirit ('Ohana) 'Ike aku, 'ike mai, kōkua aku kōkua mai; pela iho la ka nohana 'ohana ('Ōlelo No'eau 1200) Recognize others, be recognized, help others, be helped; such is a family relationship.
4. Educate for Service, Justice and Peace (Aloha) Ka lama kū o ka no'eau ('Ōlelo No'eau 1430) Education is the standing torch of wisdom.
5. Educate for Adaptation and Change (Aina) 'A'ohe pau ka 'ike i ka hālau ho'okahi ('Ōlelo No'eau 203) All knowledge is not taught in the same school

### Alignment of Course Learning Outcomes

	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
<b>Marianist Vaues</b>	2	2	2,5	4	4,5
<b>PLOs</b>	1	2	2	5	3
<b>Native Hawaiian Values</b>	2	2	2	3	4,5

### Course Activities

Our **dynamic discussions** will ignite your curiosity and allow you to dive deep into pressing health issues, exchanging ideas and perspectives with your classmates. You'll tackle real-world problems, debate emerging topics, and collaboratively explore solutions that make a difference.

**Challenging homework assignments** are designed to reinforce your understanding and push you to apply concepts in meaningful ways. You'll analyze data, interpret findings, and connect theory to practice, all while honing your problem-solving skills. These assignments aren't just about getting the right answer—they're about thinking critically and creatively like a true epidemiologist.

To keep your knowledge sharp and ready for action, **quizzes** will offer quick and stimulating checkpoints throughout the course. They provide immediate feedback, helping you track your progress and identify areas to focus on, ensuring you're always moving forward with confidence.

The real adventure unfolds with our immersive **projects**, such as the Epiville assignments and the Oswego case study. Imagine stepping into the role of an epidemiologist, investigating outbreaks, deciphering patterns, and making discoveries that could impact public health. These hands-on experiences simulate real epidemiological inquiries, allowing you to apply what you've learned in a practical, impactful way.

## Course Policies

### Attendance

Students are expected to attend regularly all courses for which they are registered. Student should notify their instructors when illness or other extenuating circumstances prevents them from attending class and make arrangements to complete missed assignments. Notification may be done by emailing the instructor's Chaminade email address, calling the instructor's campus extension, or by leaving a message with the instructor's division office. It is the instructor's prerogative to modify deadlines of course requirements accordingly. Any student who stops attending a course without officially withdrawing may receive a failing grade.

Unexcused absences equivalent to more than a week of classes may lead to a grade reduction for the course. Any unexcused absence of two consecutive weeks or more may result in being withdrawn from the course by the instructor, although the instructor is not required to withdraw students in that scenario. Repeated absences put students at risk of failing grades.

Students with disabilities who have obtained accommodations from the Chaminade University of Honolulu Tutor Coordinator may be considered for an exception when the accommodation does not materially alter the attainment of the learning outcomes.

Federal regulations require continued attendance for continuing payment of financial aid. When illness or personal reasons necessitate continued absence, the student should communicate first with the instructor to review the options. Anyone who stops attending a course without official withdrawal may receive a failing grade or be withdrawn by the instructor at the instructor's discretion.

### Changes to the Syllabus

While the provisions of this syllabus are as accurate and complete as possible, your instructor reserves the right to change any provision herein at any time. Every effort will be made to keep you advised of such changes, and information about such changes will be available from your instructor.

### Grades of Incomplete

Students and instructors may negotiate an incomplete grade when there are specific justifying circumstances. An Incomplete Contract (available from the Divisional Secretary and the Portal) must be completed. When submitting a grade, the "I" will be accompanied by the alternative grade that will automatically be assigned after 90 days. These include IB, IC, ID, and IF. If only an "I" is submitted the default grade is F. The completion of the work, evaluation, and reporting of the final grade is due within 90 days after the end of the semester or term. This limit is unlikely to be extended.

## Final Grades

Final grades are submitted to [Self-Service](#):

Quizzes	10 percent
Midterm Exam	25 percent
Epiville Assignments	15 percent
Course Exercises	10 percent
Discussions	15 percent
Final Exam	<u>25 percent</u>
	100 percent

## Important Information

### TITLE IX AND NONDISCRIMINATION STATEMENT:

Chaminade University of Honolulu is committed to providing a learning, working and living environment that promotes the dignity of all people, inclusivity and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. For pregnant and parenting students, I am also obligated to provide you with similar resources for support and protections available to you. My goal is to make sure that you are aware of the range of options available to you and have access to the resources and support you need.

### Nondiscrimination Policy & Notice of Nondiscrimination

The university is committed to comply with all State and Federal statutes, rules, and regulations which prohibit discrimination. The university is committed to a policy of nondiscrimination on the basis of race, sex, gender identity and expression, age, religion, color, national origin (including shared ancestry and ethnic characteristics), ancestry, citizenship, disability, genetic information, marital status, breastfeeding, arrest and court record (except as permissible under State law), sexual orientation, or status as a covered veteran. Inquiries about Title IX or general Civil Rights concerns may be referred to the University's Title IX Coordinator, the U.S. Department of Education's Office for Civil Rights, or both and contact information may be found [HERE](#). *On-campus Confidential Resources may also be found here at [CAMPUS CONFIDENTIAL RESOURCES](#).*

The University's Nondiscrimination Policy and Grievance Procedures can be located on the University webpage at: <https://chaminade.edu/compliance/title-ix-nondiscrimination-policies-procedures/>.

To report information about conduct that may constitute sex discrimination or make a complaint of sex discrimination under Title IX, please refer to the [Campus Incident Report form](#). Chaminade University of Honolulu prohibits sex discrimination in any education program or activity that it operates.

### **Hazing Prevention Resources and Athlete Helpline:**

Assists athletes, parents, coaches, and any allies interested in ensuring physical and mental safety for sports communities by offering confidential emotional support, crisis intervention, informational athlete-focused resources, and guidance related to concerns about any type of abuse—including hazing.

Chaminade University's Hazing Policy:

<https://catalog.chaminade.edu/studenthandbook/codeofconduct>

<https://hazingpreventionnetwork.org/athlete-helpline/>

<https://hazingpreventionnetwork.org/how-to-report-hazing/>

**Basic Needs Resources:** <https://chaminade.edu/basic-needs/>

### **Campus Safety/ SafeSwords**

A program for students, faculty and staff, who may feel uncomfortable or unsafe walking alone on campus, at any time of the day. Call security, and a security professional will meet you at your location on campus. The security professional will escort you to your residence hall, car, etc. Students may utilize this when walking to and from night classes around campus or after late night events. [SafeSwords Webpage](#)

### **CUH Alert Emergency Notification**

To get the latest emergency communication from Chaminade University, students' cell numbers will be connected to Chaminade's emergency notification text system. When you log in to the Chaminade portal, you will be asked to provide some emergency contact information. If you provide a cellphone number, you will receive a text from our emergency notification system asking you to confirm your number. You must respond to that message to complete your registration and get emergency notifications on your phone.

### **Assessment for Student Work**

With the goal of continuing to improve the quality of educational services offered to students, Chaminade University conducts assessments of student achievement of course, program, and institutional learning outcomes. Student work is used anonymously as the basis of these assessments, and the work you do in this course may be used in these assessment efforts.

### **Student with Disabilities Statement**

Chaminade University of Honolulu offers accommodations for all actively enrolled students with disabilities in compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the ADA Amendments Act (2008).

Students are responsible for contacting Kokua Ike: Center for Student Learning to schedule an appointment. Verification of their disability will be requested through appropriate documentation and once received it will take up to approximately 2–3 weeks to review them. Appropriate paperwork will be completed by the student before notification will be sent out to their instructors. Accommodation paperwork will not be automatically sent out to instructors each semester, as the student is responsible to notify Kokua Ike via email at [ada@chaminade.edu](mailto:ada@chaminade.edu) each semester if changes or notifications are needed.

### **Kōkua 'Ike: Tutoring & Learning Services**

Chaminade is proud to offer free, one-on-one tutoring and writing assistance to all students. Tutoring and writing help is available on campus at Kōkua 'Ike: Center for Student Learning in a variety of subjects (including, but are not limited to biology, chemistry, math, nursing, English, etc.) from trained Peer and Professional Tutors. Please check [Kōkua 'Ike's](#) website for the latest times, list of drop-in hours, and information on scheduling an appointment. Free online tutoring is also available via TutorMe. Tutor Me can be accessed 24/7 from your Canvas account. Simply click on Account > TutorMe. For more information, please contact Kōkua 'Ike at [tutoring@chaminade.edu](mailto:tutoring@chaminade.edu) or 808-739-8305.

## Readings & Due Dates

Module #	Assignment Title	Textbook Chapter
Module 1	“What is epidemiology” Discussion	1
	“Foundations” quiz	
Module 2	“Pioneers in Epidemiology”	2
	“Foundations of Epidemiology” review discussions	
Module 3	“Infectious Disease Concepts” quiz	3
	“History of Epidemiology” review discussion	
Module 4	“Age-adjusting population incidence rates” exercise	4
	“Chronic Disease Concepts in Epidemiology” quiz	
	“Analyzing an Emerging Infectious Disease Scenario” discussion	
Module 5	“Study Plans” quiz	5
	“Assessing Chronic Disease Epidemiology in a Community Context” discussion	
	“Ecological Study” Epiville assignment	
Module 6	“Study Design” quiz	6
	“Designing an Epidemiologic Study Plan” discussion	
Module 7	“Case-Control study”, “Cohort study”, and “Bias” Epiville assignments	7
	“Hypothesis Testing and Measures of Association” quiz	
	“Designing an Experimental Epidemiologic Study” discussion	
Module 8	“Randomized Trials” Epiville assignment	8
	“Identifying and Improving Study Validity” quiz	
	“From Hypothesis to Measures of Association” Discussion	
Module 9	Midterm Exam	
Module 10	“Causality” quiz	9
	“Causal Inference” and “Confounding” Epiville Assignments	
	“Evaluating Validity in an Epidemiologic Study” Discussion	
Module 11	“Health and Population Indicators” quiz	10
	“Exploring Causality in Epidemiology” Discussion	
Module 12	“Field Epidemiology” Quiz	11
	“SARS Outbreak Study 1&2” Epiville Assignments	

	"Investigating a Suspected Foodborne Outbreak" Discussion	
Module 13	"Clinical Epidemiology" quiz	12
	"Screening" Epiville Assignment	
	"Evaluating a Proposed Diabetes Screening Program" Discussion	
Module 14	"Social Epidemiology" quiz	13
Module 15	"Oswego Outbreak" Case Study	
Module 16	Final Exam	

Every effort has been made to ensure that the material in this syllabus is accurate and complete. However, occasionally changes must be made to the printed schedule. Thus, the instructor reserves the right to make any changes in the contents of this syllabus that he deems necessary or desirable. These changes, if any, will be announced as soon as the need for them becomes apparent.