Individual course objectives – upon completion of the core classes, students will be able to achieve these objectives.

142   Biostatistics
        1. Discuss descriptive statistics, probability, probability distributions, point and interval estimation, hypothesis testing, chi-square, correlation and regression with biomedical applications.

150A   Epidemiology
        1. Understanding of a broad view of global and domestic health problems, epidemiological principles of disease, ethics and library research
        2. Understanding of study design, including exposure outcome, problems of error and bias
        3. Understanding of quantification and inference, including rate estimation, risks, ratios, summarizing of data, interpreting statistical results, screening for disease.
        4. Understanding of causal inference and epidemiology in action, including steps for assessing causal relationships, critical reviews, and clinical/applied epidemiology.

150B   Environmental Health
        1. Describe, contrast, and compare as well as conduct basic analyses using the four principal skills in environmental health sciences: toxicology, exposure assessment, epidemiology, risk assessment.
        2. Describe major ways in which the environment and human health are linked in different parts of the world and for different populations.
        3. Describe ways that scientific studies determine the quantitative relationship between environmental parameters and health.
        4. Describe ways that the health impact from major environmental hazards can be effectively controlled.

150D   Health Policy
        1. Understand the organization and financing of the US Health Care system
        2. Understand the history of private health insurance
        3. Describe managed care, including case studies
        4. Describe different hospital systems
        5. Understand nursing and other health care professions
        6. Describe physicians and physician groups
        7. Understand medical technology
        8. Pharmaceuticals and Medicare Part D
        9. Improving quality of care
        10. Public Health, preventive care, and medicine
        11. Consumer-driven health care and health savings accounts
        12. Presidential policy proposals & national health care reform
        13. Health policy & politics of health care
        14. Health and policy process
        15. Congress
        16. Presidency
        17. Public Policy Analysis
        18. Prison Health Policy
        19. Immigrant Health Policy
        20. Bureaucracy
        21. Interest groups

22. Tobacco policy
23. Bioethics
24. States and health care reform

150E   Community Health
1. Describe major social, cultural, and bio-behavioral patterns of health and health behavior in community settings.
2. Describe causes and consequences of leading health behaviors, including tobacco exposure, dietary patterns, physical activity, alcohol consumption, and sexual practices.
3. Describe major public health interventions to improve health in community settings.
4. Describe major theories of health and social behavior, e.g., social learning theory and stages-of-change model, and their application in the conduct of research and practice in public health.
5. Describe basic research from epidemiology and public health on leading health conditions, such as cancer, asthma, obesity, AIDS, and depression.

162A   Microbiology
1. Acquire factual knowledge about microbiology.
2. Understand concepts relating to interaction of micro-organisms with their environment, including host-parasite relationship and strategies of intervention to prevent infectious diseases
3. Build a background in microbiology appropriate for entrance into graduate level training in health sciences or basic biological sciences.

Learning Goals for Public Health Majors

The faculty who teach the Public Health Undergraduate core classes want Public Health majors to have knowledge and skills in the basic principles in the following areas:

A)   Critical Thinking Skills:

1. Describe the Public Health framework of the determinants of the health of populations.
2. Recognize the Public Health perspective of disease prevention and health promotion.
3. Explain how Public Health studies the interplay between biology, environment, and behavior.
4. Understand the basic concepts from the social and behavioral sciences in Public Health.

B)   Quantitative Skills:

1. Recognize commonly used measures of population health.
2. Identify commonly used methods of measuring risk.
3. Describe common study designs for assessing risk from exposures.
4. Assemble and display summary measures using graphs and tables.
5. Recognize the basics of statistical hypothesis testing.
6. Know how to calculate and interpret confidence intervals.

C)   Communication Skills:

1. Incorporate statistical and scientific findings into written materials.
2. Prepare fact sheets and other health education tools.
3. Know how to interpret Public Health reports and scientific literature.
4. Create and give presentations on Public Health issues.

D)   Problem-Solving Skills:

1. Research and summarize relevant Public Health literature.
2. Apply "systems thinking" approach to issues in Public Health.
3. Identify problems in Public Health with "upstream-downstream" model.

E)   Specialized Knowledge:

1. Integrate human biology and genetics with Public Health issues.
2. Comprehend the basics of infectious disease.
3. Understand the basics of chronic disease.
4. Examine and assess environmental health issues.
5. Describe organization and financing of US health care system.

F)   Lifelong Learning Skills:

1. Identify ethical issues of Public Health.
2. Be able to perform data collection and research.
3. Acknowledge the role of disparities in Public Health.

Program Level Skills	142 Biostat	150A Epidem.	150B Environ. Health	150D Health Policy	150E Community Health	162A Microbio	Electives
Critical Thinking							
Describe the P.H. framework: determinants of the health of populations		X			X		X
Recognize the P.H. perspective: disease prevention and health promotion		X			X		
Explain how P.H. studies the interplay between biology, environment, and behavior		X	X		X		
Understand the basic concepts from the social and behavioral factors used in P.H.		X			X		X
Quantitative Skills							
Recognize commonly used measures of population health	X	X	X		X		
Identify commonly used methods of measuring risk associated with exposures		X	X		X		
Describe common study designs for assessing risk		X			X		
Assemble and display summary measures using graphs and tables	X	X					
Recognize the basics of statistical hypothesis testing	X	X					
Know how to calculate and interpret confidence intervals	X	X					
Communication Skills							
Incorporate statistical and scientific findings into written materials				X	X		
Prepare fact sheets and other health education tools		X		X	X		
Know how to interpret P.H. reports and scientific literature		X	X	X	X	X	
Create and give presentations on Public Health issues				X	X		
Problem Solving Skills							
Research and summarize relevant P.H. literature		X	X	X	X	X	
Apply "systems thinking" approach					X	X	
Identify problems using "upstream-downstream" model					X		
Specialized Knowledge							
Integrate human biology and genetics with Public Health issues					X	X	X

Comprehend the basics of infectious disease							X	
Understand the basics of chronic disease		X						
Examine and assess environmental health issues			X			X		
Describe organization and financing of US health care system				X				
Lifelong Learning Skills								
Identify P.H. ethical issues		X		X				
Be able to perform data collection and research	X	X						
Acknowledge the role of disparities in Public Health			X	X		X		