

**COURSE DEVELOPMENT GUIDE
FOR
GRADUATE MEDICAL
AND PUBLIC HEALTH PROGRAMS**

**THE DEPARTMENT OF
PREVENTIVE MEDICINE AND BIOMETRICS**



**UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
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IMPORTANT NOTICE: This guidance package is a living document. The Curriculum Subcommittee will update it as needed. We hope this material will be helpful to you, and we solicit your comments to improve it. If you have any questions, please contact the Chair, Curriculum Subcommittee.

Summary of changes in this revision: The Association of Schools of Public Health (ASPH) Master's Degree in Public Health (MPH) Core Competency Development Project Guidelines (2006/7) were substituted for PMB Core Learning Objectives (2004 version) as the reference standard for design and development of PMB courses and learning objectives. The list of the PMB Core Learning Objectives (2004) was retained as an additional reference for course developers.

Course Development Guide

The Curriculum Subcommittee has created this packet to assist faculty in creating a new course syllabus or when significantly modifying a current course syllabus. Significant changes include those that alter the course content or Learning Objectives, or that consolidate two courses. (Minor changes to a course that do not change the “substance” of the course are to be submitted in memorandum form by a division or program director to the Chair, Curriculum Subcommittee. Tactical changes such as chronological order of classes or guest speakers need not be submitted.)

The following material is included:

- **Association of Schools of Public Health (ASPH) Core and Cross-Cutting Competencies** (pages 5-13). This matrix maps our MPH required courses to competencies developed by ASPH in 2007. All courses that are part of the PMB curriculum must support at least one of these competencies. ASPH Competencies covered in a course should be documented in the Learning Objectives section of syllabi. Course Directors can use the matrix to know what was covered in the required courses (academic year 2008) and then focus on gaps or weakly covered areas of material.
- **PMB Core Learning Objectives** (pages 14-16). List of Learning Objectives from the five core MPH subject area courses (academic year 2004). Note that many of these are very similar to the ASPH Competencies.
- **Guidelines for Writing Quality Learning Objectives** (pages 17-21). Learning objectives are brief, clear, targeted statements of what the student is expected to be able to do after completion of the course. Most courses in higher education focus on the cognitive domain, which consists of six categories of understanding: knowledge, comprehension, application, analysis, synthesis, and evaluation. Generally, instructors will want to design learning objectives to target a range of levels of student understanding. The phrasing of learning objectives will help guide both instructional activities and assessment, thus instructors should carefully select the emphasis of learning and the relevant verbs. (Refer to the table on page 20 of this guide.)
- **Criteria for Review of Proposed New Courses Curricula, Course Changes, or Periodic Review of Syllabus** (pages 22-23). This is a checklist of factors for use by the Curriculum Subcommittee when reviewing the course for approval. Course directors should review this checklist when preparing the USUHS Form 1322, and also ensure these items are appropriately addressed when submitting the syllabus for approval.

- **Form 1322, USUHS Graduate Course Description Form** (page 24). This is the formal application form for proposing a new course or modification to an existing course.
- **Suggested template of a syllabus** (pages 25-26). Program and Division Directors can provide examples of excellent syllabi and mentor new course developers.

How to Submit a Request

New and revised course requests should be **submitted to the Subcommittee two quarters (six months) prior** to offering/teaching it to allow adequate time for the committee review and approval process, and also for inclusion of the information in the Graduate Programs Information Handbook. Courses not submitted with adequate lead time cannot be guaranteed approval before the anticipated course offering.

Submit to the Chair of the Curriculum Subcommittee:

- **USUHS Form 1322**
- **Syllabus**
- **Cover letter** with a general description of the course and the PMB Core Learning Objectives covered in the course. The cover letter must be signed by a Division Director or Program Director.

After the course has been approved by the Subcommittee, the Chair, Curriculum Subcommittee will: 1) forward the course development package to the Chair, Graduate Affairs Committee, and the Chair, PMB for signature; 2) forward the package to the Graduate Education Office (Ms. Janet Anastasi) for assignment of a course number, and 3) forward an informational copy to the Graduate Program Administration Office (Ms. Tina Thompson) so the course description will be included in the Graduate Programs Information Handbook, the syllabus will be recorded and archived for administrative and Council on Education for Public Health (CEPH) requirements, and the course can be inserted into academic quarter schedules.

Summary

The Curriculum Subcommittee has prepared this package to assist faculty members to develop quality courses and syllabi, to assist Curriculum Subcommittee members in review of proposed courses, to provide high quality syllabi with a measure of standardization for CEPH review and accreditation, and, ultimately, to provide our students with the best products to facilitate their public health education.

This guidance package is a living document. The Curriculum Subcommittee will update this guidance package as needed. We hope this material will be helpful to you, and we solicit your comments to improve it. If you have any questions, please contact the Chair, Curriculum Subcommittee.

ASPH MPH Core Competencies and Cross-Cutting Competencies

Course Coverage/Emphasis of the Competencies (data collected March 2008):

● = Competency fully covered

○ = Competency partially addressed

Left blank = Competency not addressed

For a fully covered ("●") competency, an advanced level of mastery is expected and the student is expected to be able to synthesize, critique, or teach the concept or skill.

For a partially addressed ("○") competency, the student is expected to be knowledgeable of the concept or skill and be able to apply or describe it.

Core Competencies Upon Graduation a student with an MPH should be able to:	PMO 505	PMO 530	PMO 540	PMO 680	PMO 503	PMO 511	PMO 526	PMO 504	PMO 670	PMO 671-674
BIOSTATISTICS										
Describe the roles biostatistics serves in the discipline of public health.	○				●	●		●	○	○
Describe basic concepts of probability, random variation and commonly used statistical probability distributions.					●	●		●		○
Describe preferred methodological alternatives to commonly used statistical methods when assumptions are not met.					●			●		○
Distinguish among the different measurement scales and the implications for selection of statistical methods to be used based on these distinctions.					●	○		●		○
Apply descriptive techniques commonly used to summarize public health data.	○		○		●	○		●		●
Apply common statistical methods for inference.	○				●	●		●		●
Apply descriptive and inferential methodologies according to the type of study design for answering a particular research question.					●	●		●		●
Apply basic informatics techniques with vital statistics and public health records in the description of public health characteristics and in public health research and evaluation.	●		○		●	●		●	○	○
Interpret results of statistical analyses found in public health studies.	○		○		●	●		●		●
Develop written and oral presentations based on statistical analyses for both public health professionals and educated lay audiences.	○		○		○			○	○	●

Core Competencies Upon Graduation a student with an MPH should be able to:	PMO 505	PMO 530	PMO 540	PMO 680	PMO 503	PMO 511	PMO 526	PMO 504	PMO 670	PMO 671 - 674
ENVIRONMENTAL HEALTH SCIENCES										
Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.			●	○					○	
Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.			●	○						
Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.	○		●	○					○	
Specify current environmental risk assessment methods.			●						○	
Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.			●	○					○	○
Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.			●							
Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity.			●						○	
Develop a testable model of environmental insult.			●							
EPIDEMIOLOGY										
Identify key sources of data for epidemiologic purposes.	○		○		○	●		○	○	●
Identify the principles and limitations of public health screening programs.					●	●				
Describe a public health problem in terms of magnitude, person, time and place.	○		●	○	○	●		○	○	●
Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.			○	○	○	●			○	●
Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.			○	○	○	○		○	○	●
Apply the basic terminology and definitions of epidemiology.				○	○	●		○	○	●
Calculate basic epidemiology measures.	○				○	●		○	○	○
Communicate epidemiologic information to lay and professional audiences.	●		●		○	●		○	○	●

Core Competencies Upon Graduation a student with an MPH should be able to:	PMO 505	PMO 530	PMO 540	PMO 680	PMO 503	PMO 511	PMO 526	PMO 504	PMO 670	PMO 671 - 674
Draw appropriate inferences from epidemiologic data.			●		●	●		○	○	●
Evaluate the strengths and limitations of epidemiologic reports.			●		●	●		○	○	●
HEALTH POLICY AND MANAGEMENT										
Identify the main components and issues of the organization, financing and delivery of health services and public health systems in the US.				○			●		○	
Describe the legal and ethical bases for public health and health services.				●			●		○	●
Explain methods of ensuring community health safety and preparedness.			○	○			○			
Discuss the policy process for improving the health status of populations.				●			●		○	
Apply the principles of program planning, development, budgeting, management and evaluation in organizational and community initiatives.				○			○		○	
Apply principles of strategic planning and marketing to public health.				○			●			
Apply quality and performance improvement concepts to address organizational performance issues.							●		○	○
Apply "systems thinking" for resolving organizational problems.							●		○	
Communicate health policy and management issues using appropriate channels and technologies.							●		○	
Demonstrate leadership skills for building partnerships.							●		○	
SOCIAL AND BEHAVIORAL SCIENCES										
Identify basic theories, concepts and models from a range of social and behavioral disciplines that are used in public health research and practice.		●					○			○
Identify the causes of social and behavioral factors that affect health of individuals and populations.		●		○			○			○
Identify individual, organizational and community concerns, assets, resources and deficits for social and behavioral science interventions.		●		○			○		○	
Identify critical stakeholders for the planning, implementation and evaluation		○	○	○					○	○

Core Competencies Upon Graduation a student with an MPH should be able to:	PMO 505	PMO 530	PMO 540	PMO 680	PMO 503	PMO 511	PMO 526	PMO 504	PMO 670	PMO 671 - 674
of public health programs, policies and interventions.										
Describe steps and procedures for the planning, implementation and evaluation of public health programs, policies and interventions.		●		○	○				○	
Describe the role of social and community factors in both the onset and solution of public health problems.		●	○	○			○		○	
Describe the merits of social and behavioral science interventions and policies.		●								
Apply evidence-based approaches in the development and evaluation of social and behavioral science interventions.		●		○	○				○	
Apply ethical principles to public health program planning, implementation and evaluation.		○		○			○		○	○
Specify multiple targets and levels of intervention for social and behavioral science programs and/or policies.		●		○			○		○	

Cross Cutting Competencies Upon graduation, it is increasingly important that a student with an MPH be able to:	PMO 505	PMO 530	PMO 540	PMO 680	PMO 503	PMO 511	PMO 526	PMO 504	PMO 670	PMO 671 - 674
COMMUNICATION AND INFORMATICS										
Describe how the public health information infrastructure is used to collect, process, and maintain and disseminate data.	●				○	○	●		○	○
Describe how societal, organizational and individual factors influence and are influenced by public health communications.		○		○			○		○	
Discuss the influences of social, organizational and individual factors on the use of information technology by end users.							●			
Apply theory and strategy-based communication principles across different settings and audiences.	○									
Apply legal and ethical principles to the use of information technology and resources in					○		○		●	●

Cross Cutting Competencies Upon graduation, it is increasingly important that a student with an MPH be able to:	PMO 505	PMO 530	PMO 540	PMO 680	PMO 503	PMO 511	PMO 526	PMO 504	PMO 670	PMO 671 - 674
public health settings.										
Collaborate with communication and informatics specialists in the process of design, implementation, and evaluation of public health programs.	○				○		●	○	○	
Demonstrate effective written and oral skills for communicating with different audiences in the context of professional public health activities.	○	○	○		○		●	○	●	●
Use information technology to access, evaluate, and interpret public health data.	●				○		●	○	●	●
Use informatics methods and resources as strategic tools to promote public health.	○						●		○	
Use informatics and communication methods to advocate for community public health programs and policies.	○									
DIVERSITY AND CULTURE										
Describe the roles of history, power, privilege and structural inequality in producing health disparities.		○		●						
Explain how professional ethics and practices relate to equity and accountability in diverse community settings.				●			○		○	○
Explain why cultural competence alone cannot address health disparity.		○		○						
Discuss the importance and characteristics of a sustainable diverse public health workforce.				●			○			
Use basic concepts and skills involved in culturally appropriate community engagement and empowerment with diverse communities.		○							○	
Apply the principles of community-based participatory research to improve health in diverse populations.		○							○	
Differentiate among availability, acceptability, and accessibility of health care across diverse populations.				○					○	
Differentiate between linguistic competence, cultural competency, and health literacy in public health practice.									○	
Cite examples of situations where consideration of culture-specific needs resulted in a more effective modification or adaption of a health intervention.		○		○			○		○	
Develop public health programs/strategies responsive to the diverse cultural		○								

Cross Cutting Competencies Upon graduation, it is increasingly important that a student with an MPH be able to:	PMO 505	PMO 530	PMO 540	PMO 680	PMO 503	PMO 511	PMO 526	PMO 504	PMO 670	PMO 671 - 674
values/traditions of communities being served.										
LEADERSHIP										
Describe the attributes of leadership in public health.							●			
Describe alternative strategies for collaboration and partnership among organizations, focused on public health goals.		○					●		○	
Articulate an achievable mission, set of core values, and vision.							●		○	
Engage in dialogue and learning from others to advance public health goals.		○	○				○		○	
Demonstrate team building, negotiation, and conflict management skills.							●		○	
Demonstrate transparency, integrity, and honesty in all actions.					○		●	○	○	
Use collaborative methods for achieving organizational and community health goals.		○					●		○	
Apply social justice and human rights principles when addressing community needs.			○				○		○	○
Develop strategies to motivate others for collaborative problem solving, decision-making, and evaluation.		○	○				●		○	
PUBLIC HEALTH BIOLOGY										
Specify the role of the immune system in population health.										
Describe how behavior alters human biology.										
Identify the ethical, social and legal issues implied by public health biology.				●						
Explain the biological and molecular basis of public health.				○						
Explain the role of biology in the ecological model of population-based health.				○						
Explain how genetics and genomics affect disease processes and public health policy and practice.				○						
Articulate how biological, chemical and physical agents affect human health.			○	○					○	○
Apply biological principles to development and implementation of disease prevention, control or management programs.				○					○	○
Apply evidenced-based biological and molecular concepts to inform public health				○					○	

Cross Cutting Competencies Upon graduation, it is increasingly important that a student with an MPH be able to:	PMO 505	PMO 530	PMO 540	PMO 680	PMO 503	PMO 511	PMO 526	PMO 504	PMO 670	PMO 671 - 674
laws, policies, and regulations.										
Integrate general biological and molecular concepts into public health.				○						
PROFESSIONALISM										
Discuss sentinel events in the history and development of the public health profession and their relevance for practice in the field.			○	●	○	●	●			
Apply basic principles of ethical analysis (e.g. the Public Health Code of Ethics, human rights framework, other moral theories to issues of public health practice and policy).				○	○		●		●	●
Apply evidenced-based principles and the scientific knowledge base to critical evaluation and decision-making in public health.		○		●	○		○		●	●
Apply the core functions of assessment, policy development, and assurance in the analysis of public health programs and their solutions.				○			●		●	●
Promote high standards of personal and organizational integrity, compassion, honesty and respect for all people.							●		●	●
Analyze determinants of health and disease using an ecological framework.	○	○		○					○	○
Analyze the potential impacts of legal and regulatory environments on the conduct of ethical public health research and practice.				●			●		○	○
Distinguish between population and individual ethical considerations in relation to the benefits, costs, and burdens of public health programs.				●		○	○		○	●
Embrace a definition of public health that captures the unique characteristics of the field (e.g., population-focused, community-oriented, prevention-motivated and rooted in social justice) and how these contribute to professional practice.				●			●		●	●
Appreciate the importance of working collaboratively with diverse communities and constituencies (e.g., researchers, practitioners, agencies and organizations).		○							●	●
Value commitment to lifelong learning and professional service including active participation in professional organizations.							●		○	○
PROGRAM PLANNING										

Cross Cutting Competencies Upon graduation, it is increasingly important that a student with an MPH be able to:	PMO 505	PMO 530	PMO 540	PMO 680	PMO 503	PMO 511	PMO 526	PMO 504	PMO 670	PMO 671 - 674
Describe how social, behavioral, environmental, and biological factors contribute to specific individual and community health outcomes.		●	○	○			○		○	●
Describe the tasks necessary to assure that program implementation occurs as intended.		○					○		○	
Explain how the findings of a program evaluation can be used.		○					○		○	
Explain the contribution of logic models in program development, implementation, and evaluation.										
Differentiate among goals, measurable objectives, related activities and expected outcomes for a public health program.		●		○					●	●
Differentiate the purposes of formative, process, and outcome evaluation.							○		○	
Differentiate between qualitative and quantitative evaluation methods in relation to their strengths, limitations, and appropriate uses, and emphases on reliability and validity.									○	●
Prepare a program budget with justification.		○								
In collaboration with others, prioritize individual, organizational and community concerns and resources for public health programs.		○		○					○	
Assess evaluation reports in relation to their quality, utility, and impact on public health.			○						○	○
SYSTEMS THINKING										
Identify characteristics of a system.				○			●		○	
Identify unintended consequences produced by changes made to a public health system.				○			○		○	
Provide examples of feedback loops and “stocks and flows” within a public health system.							●			
Explain how systems (e.g., individuals, social networks, organizations, and communities) may be viewed as systems within the systems in the analysis of public health problems.							●		○	
Explain how systems models can be tested and validated.							○			

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Explain how the contexts of gender, race, poverty, history, migration, and culture are important in the design of interventions within public health systems.		●		●					○	
Illustrate how changes in public health systems (including input, processes, and output) can be measured.							○		○	○
Analyze inter-relationships among system that influence the quality of life of people in their communities.				○			○		○	
Analyze the effects of political, social and economic policies on public health systems at the local, state, national and international levels.			○	●			○		○	○
Analyze the impact of global trends and interdependencies on public health related problems and systems.				○			○		○	○
Assess strengths and weaknesses of applying the systems approach to public health problems.							○			

PMB Core Learning Objectives

BIOSTATISTICS
Describe and interpret public health data using simple descriptive and graphical statistical methods, including exploratory data analysis (EDA) methods.
Apply the concept of probability to statistical inference.
Use the conditional probabilities of sensitivity, specificity, and predictive value to evaluate diagnostic and screening tests.
Understand and appropriately apply major statistical probability distributions (binomial, Poisson, normal, Chi-square, Student's t, and F).
Describe the appropriate use of sampling techniques, and the concept of the sampling distribution and its role in statistical inference.
State the Central Limit Theorem and describe its use in statistics.
Compute and interpret point and confidence interval estimates, based upon a given sample (or samples), for univariate and bivariate parametric and non-parametric situations.
Compute and interpret hypothesis tests, based upon a given sample (or samples), for univariate and bivariate parametric and non-parametric situations.
Determine simple random sample size needed for a biomedical study by confidence interval and hypothesis testing approaches.
Apply and interpret the analysis of contingency tables.
Describe and interpret the linear association between two continuous variables using linear regression and correlation.
Understand and apply basic principles of experimental design, including randomization, pairing, blocking, blinding, nesting, and replication.
Extend the analysis of the difference between two population means to more than two means via analysis of variance and covariance.
Use and interpret multiple regression to predict a dependent variable as the function of many independent predictors.
Explain and apply appropriate statistical methods to the analysis of survival data.
EPIDEMIOLOGY
Define epidemiology and appropriately use the language of epidemiology.
Understand the differences, advantages, and limitations of each of the following analytic and descriptive study designs: case series, ecologic, cross-sectional, case-control, cohort, and clinical trials.
Select the best study design to answer a specific question.
Formulate clear case definitions and precise exposure measures in epidemiologic studies.
Calculate and interpret statistical measures of association, including rate ratios/relative risks, odds ratios, and attributable risks.
Evaluate and explain the impact that chance, bias, confounding, and effect modification, as well as statistical power, sampling methods, and sample size, have on epidemiologic findings and generalizability.
Interpret and critically evaluate the scientific literature.
Explain how to use epidemiological evidence to judge causal relationships among possible factors and health outcomes.
Design and conduct a basic outbreak investigation, including data collection and analysis, interpretation of findings, and formulation of intervention recommendations.
Calculate, graphically display, and interpret basic epidemiologic measures of disease frequency (epidemic curves, frequency counts, proportions, prevalence, attack rates, incidence, mortality, case fatality, and confidence intervals).
Characterize disease patterns and trends within a population by describing "agent-host-environment" and "person-place-time" variables.
Interpret sensitivity, specificity, predictive values, validity, and reliability for screening and confirmatory diagnostic tests.
Design and evaluate a basic survey instrument.
Manipulate, merge, analyze, and interpret electronic data sets using spread sheets, databases, and other software in common use in epidemiology and public health.
Design, establish, and evaluate basic medical surveillance systems.

Use epidemiology as a tool for the implementation and evaluation of preventive medicine and public health interventions.
Identify sources of national, international, and military epidemiologic data.
List the components of a proposal to conduct an epidemiological study, including specific aims, sample size consideration, and human subjects.
Evaluate the ethical implications of epidemiologic and other scientific studies.
ENVIRONMENTAL AND OCCUPATIONAL HEALTH
Define environmental epidemiology, and discuss major regional and global environmental health problems in the context of their scientific, social, political and economic aspects.
Discuss basic toxicological principles as they apply to environmental health, including routes of exposure, factors that influence human effects, endpoints for toxicologic evaluation, and the establishment of human exposure limits.
Discuss significant workplace environmental health issues, including the leading causes of workplace-related disease and injury, basic exposure control mechanisms, and workplace monitoring.
Discuss the impact of air quality on human health, and describe the major sources of air pollutants, general means of reducing air pollution, and trade-offs associated with any control measure.
Discuss the principal environmental health issues related to food, including food service facility inspections, types of contamination, major food borne illnesses, the essential components of food sanitation, and regulatory mechanisms to protect the safety of food supplies.
Discuss the principal environmental health issues related to drinking water, including selection of sources, treatment and disinfection processes, alternative treatment methods, bacteriological monitoring, and regulatory mechanisms to insure appropriate water quality.
Discuss the principal environmental health issues related to wastewater treatment, handling, disinfection, and disposal, describe the treatment processes in a wastewater plant, and discuss the public health aspects of sludge disposal options.
Discuss the principal environmental health issues related to solid waste, including major approaches to treatment, disposal, and recycling, regulatory requirements for hazardous and non-hazardous wastes, and incorporation of community input in site selection for waste disposal sites.
Discuss the public health impact of principal disease vectors and hosts, and integrated pest management techniques.
Discuss the leading causes of death and injury for adults and children in the U.S., and outline basic control mechanisms including industrial safety methods, analysis of accidents and injury control policies.
Discuss the impact of major environmental health legislation on control of hazardous and toxic wastes and substances, the protection and regulation of air, water, food and drugs, and occupational safety and health.
Discuss the basic methods, limitations, and applications of environmental risk assessment, risk management and risk communication.
Describe the common sources of ionizing and non-ionizing radiation, quantification of dosage, basic biological effects, and methods for limiting human exposure.
Discuss the health impact of global environmental issues such as ozone depletion, acid rain, global warming, deforestation, loss of biodiversity, topsoil erosion, wetland destruction, and land use changes associated with rapid development.
HEALTH SERVICES ADMINISTRATION
Discuss the evolution of the current U.S. health care system, including the military health care system, and explain the effect of medical, fiscal, administrative, legal, social, and political issues on major transitions.
Identify the macroeconomic factors that influence the need, demand, and cost of medical care and discuss how these factors have led to rapid growth in U.S. health care expenditures.
Describe the mechanisms for financing healthcare organizations, to include reimbursement of professionals and institutions by third-party payers, and assess their relationship to cost containment.
Describe the organization of health care services in the U.S., addressing types of facilities (hospitals, outpatient clinics, hospital emergency departments, community health centers, surgicenters, urgent care centers) and levels of care (acute, convalescent, extended care, home care).
Describe the dimensions of health care quality assessment.
Describe the legislative process and how laws are enacted that affect the U. S. health care system.
Describe the concept of outcomes measurement in medical care and its application to management of the health care organization.
Describe available government and non-governmental programs for financing, delivering, and assessing health care in America.

Discuss the impact of advancing medical technology on the delivery of health care services.
Compare international health service systems, and describe the essential differences between the health services systems in industrialized versus developing countries.
SOCIAL AND BEHAVIORAL SCIENCES
Describe how behavior contributes to national patterns of morbidity and mortality.
Discuss means of reducing risk behaviors, and promoting health behaviors, which have received empirical support in the scientific literature.
Identify challenges inherent in measuring risk behavior and how to increase the validity of such measurement.
Explain the importance of assessing a target audience's knowledge, attitudes and practices prior to attempting to influence their health-related behaviors.
Cite cognitive factors, other than knowledge, which influence health-related behaviors.
Discuss how social determinants such as socioeconomic status, culture, and social support can influence health.
Analyze a health behavior problem from a sound theoretical perspective.
Perform analyses that reflect an appreciation for the ways in which intrapersonal, interpersonal, organizational and societal influences act together to threaten or promote health.

Writing Quality Learning Objectives

Learning objectives (often called performance objectives or competencies) are brief, clear, specific statements of what learners will be able to perform at the conclusion of instructional activities. Learning objectives stem from course objectives; course objectives are broad statements reflecting general course goals and outcomes, while learning objectives are targeted statements about expected student performance. Generally, learning objectives are competency-based as they designate exactly what students need to do to demonstrate mastery of course material. With this in mind, learning objectives are always stated in terms of student outcomes. The purpose of learning objectives is to:

- Facilitate overall course development by encouraging goal-directed planning
- Inform students of the standards and expectations of the course
- Provide information for the development of assessments by identifying the types of evidence that students need to produce to demonstrate understanding
- Clarify the intent of instruction and guide the formation of instructional activities (textbook selection, teaching resources, instructional methods, etc)
- Provide a framework for evaluating student understanding and progress
- Serve as an implicit contract between instructor and students setting up a basis for accountability
- Drive curriculum planning (such as the development or revision of courses)
- Create a framework for evaluating overall effectiveness of an educational program
- Provide evidence of student learning to be utilized for accreditation

Guidelines for Writing Effective Learning Objectives:

Effective learning objectives highlight expected student behavior as well as the specific conditions and standards of performance.

- Behavior - Write learning objectives in terms of an observable, behavioral outcome; essentially, learning objectives should provide a description of what the student will be able to do. When writing the objective in performance terminology, the selection of an effective action verb is of utmost importance. The use of a clear, targeted verb provides directions about the expectations of student performance at the completion of instructional activities. Because the

verb provides the desired direction of emphasis, it is important to choose a verb that is focused and targets a level of performance appropriate for the course.

- **Student-Centered** - All learning objectives should focus on the student. An effective learning objective will explain expectations for student behavior, performance, or understanding. To ensure that learning objectives are student-centered, a good objective should appropriately complete the statement "The student will..."
- **Conditions** - Learning objectives should be specific and target one expectation or aspect of understanding and highlight the conditions under which the student is expected to perform the task. The conditions of the objective should communicate the situation, tools, references, or aids that will be provided for the student.
- **Standards** - Each learning objective should be measurable and include the criteria for evaluating student performance. Generally, standards provide information to clarify to what extent a student must perform to be judged adequate; thus effective learning objectives indicate a degree of accuracy, a quantity of correct responses or some other type of measurable information. Standards serve the dual purpose of informing students of performance expectations and providing insight as to how achievement of these expectations will be measured. Since students will utilize the standards to guide their performance, be sure to use specific terminology that has limited interpretations and ensure that all students understand the same interpretation.

Tips for Improving Learning Objectives:

- Learning objectives have two parts: an action verb and a content area. Utilize the action verb to specify the desired student performance followed by a specific description of the course-specific content target.
- Keep statements short and focused on a single outcome. This allows instructors to determine whether or not an objective has been met without having to distinguish between partial completion or success.
- To ensure that learning objectives are effective and measurable, avoid using verbs that are vague or cannot be objectively assessed. Use active verbs that describe what a student will be able to do once learning has occurred.
- Learning objectives should be student-focused and target the expected student outcome. To assist in maintaining a student-centered emphasis, start learning objectives with the phrase "The learner/student will be able to. . ."

- Learning objectives **should be SMART** (**s**pecific, **m**easurable, **a**ceptable to the instructor, **r**ealistic to achieve, and **t**ime-bound with a deadline).
- Include complex or higher-order learning objectives when they are appropriate. Most instructors expect students to go beyond memorization of facts and terminology; learning objectives should reflect instructors' expectations for student performance.
- Utilize learning objectives as a basis for course preparation. Learning objectives should match instructional strategies and assessment requirements. To ensure the connection between various course activities, it is useful to construct a table highlighting the relationship. For example:

Learning Objective	Instructional Activities	Assessment
Differentiate between qualitative and quantitative assessment	Lecture, group activity	Exam #1, Assessment Portfolio #1, Mastery Questions

Using the Taxonomy of Educational Objectives to Write Learning Objectives:

Depending on the course goals, learning objectives may target a range of skills or cognitive processes. Bloom's (1956) taxonomy of educational objectives differentiates between three domains of learning: cognitive, affective, and psychomotor.

Domain	Target	Focus
Cognitive	Knowledge, intellectual skills	Mind
Affective	Attitudes, interests, feelings, values, adjustments	Spirit
Psychomotor	Motor and manipulations skills	Body

Most courses in higher education focus on the cognitive domain, thus it is important to examine various levels of cognitive understanding. The cognitive domain is broken-down into six categories: knowledge, comprehension, application, analysis, synthesis, and evaluation. Generally, instructors will want to design learning objectives to target a range of levels of student understanding. The phrasing of learning objectives will help guide both instructional activities and

assessment, thus instructors should carefully select the emphasis of learning and the relevant verb.

Domain	Emphasis	Relevant Verbs
Cognitive	Knowledge	Recall, identify, recognize, acquire, distinguish, state, define, name, list, label, reproduce, order
Cognitive	Comprehension	Translate, extrapolate, convert, interpret, abstract, transform, select, indicate, illustrate, represent, formulate, explain, classify, comprehend
Cognitive	Application	Apply, sequence, carry out, solve, prepare, operate, generalize, plan, repair, explain, predict, demonstrate, instruct, compute, use, perform, implement, employ, solve
Cognitive	Analysis	Analyze, estimate, compare, observe, detect, classify, discover, discriminate, explore, distinguish, catalog, investigate, breakdown, order, determine, differentiate, dissect, contrast, examine, interpret
Cognitive	Synthesis	Write, plan, integrate, formulate, propose, specify, produce, organize, theorize, design, build, systematize, combine, summarize, restate, argue, discuss, derive, relate, generalize, conclude, produce
Cognitive	Evaluation	Evaluate, verify, assess, test, judge, rank, measure, appraise, select, check, judge, justify, evaluate, determine, support, defend, criticize, weigh, assess
Affective		Agree, avoid, support, participate, cooperate, praise, help, offer, join
Psychomotor		Adjust, repair, taste, bend, measure, perform, operate, use, move

Avoid using verbs that are difficult to measure objectively. The following verbs are difficult to assess, thus should be used with caution:

know	familiarize	gain knowledge of
comprehend	study	cover
understand	be aware	learn
appreciate	become acquainted with	realize

If you utilize verbs like "know" or "understand", make sure that you state how "knowledge" or "understanding" will be demonstrated. Remember, a good

learning objective is one that can be assessed to determine students' mastery of course material.

Review Checklist:

<input type="checkbox"/>	Does the learning objective stem from a course goal or objective?
<input type="checkbox"/>	Is the learning objective measurable?
<input type="checkbox"/>	Does the learning objective target one specific aspect of expected performance?
<input type="checkbox"/>	Is the learning objective student-centered?
<input type="checkbox"/>	Does the learning objective utilize an effective, action verb that targets the desired level of performance?
<input type="checkbox"/>	Do learning objectives measure a range of educational outcomes?
<input type="checkbox"/>	Does the learning objective match instructional activities and assessments?
<input type="checkbox"/>	Does the learning objective specify appropriate conditions for performance?
<input type="checkbox"/>	Is the learning objective written in terms of observable, behavioral outcomes?

Criteria for Review of Proposed New Course Curricula, Course Changes, or Periodic Review of Syllabus

Proposed Course Name, or Current Course Name and Number:

Name _____ Number _____ Date _____

1. Does the course meet a core area or gap in the curriculum for our shared public health competencies?
Yes No Comment:

2. Does it duplicate material in an existing course?
Yes No Comment:

3. Are the number of hours appropriate for the course load and contact time for lecture (rule of thumb, one credit per didactic contact hour, or 1/3 credit per lab contact hour)?
Yes No Comment:

4. Are the methods of evaluation appropriate (tests, papers)?
Yes No Comment:

5. Are the learning objectives appropriately stated and conform to the standards for learning objectives (i.e., are they measurable, use action verbs targeting performance, match instructional activities and assessments, written in observable outcomes, and student-centered)?
Yes No Comment:

6. Do learning objectives map to the competencies (i.e., competencies are addressed within objectives)?
Yes No Comment:

7. Is there a course outline and syllabus that effectively conveys to students the expectations for the course?
Yes No Comment:

8. Are the course source materials and textbooks appropriately identified and reasonable for the content to be covered (e.g., required textbooks are not inordinately expensive nor volume of material excessive for proposed credit)?

Yes No Comment:

9. If the submission involves a change in existing curriculum, what is the reason for the change (e.g., addresses a gap, significant advance in the field, student feedback, etc.)?

Yes No Comment:

10. Is there room in the current academic schedule for the course and, if it is introduced sequentially, are prerequisites to the course identified (e.g., the spring quarter is heavily loaded and little room for new classes)

Yes No Comment:

Other Comments:

Additional questions for annual syllabus review:

1. Is a current USUHS/PMB form 1322 (or historical equivalent) for course approval or change present in the folder, including course outline and appropriate signatures?

Yes No Comment:

2. Is syllabus material reflective of current knowledge in the field of study?

Yes No Comment:

3. If an elective, has the course been taken by any student in the previous two years (check with GME office registrar)?

Yes No Comment:

4. Are evaluations present, and does the syllabus reflect changes due to feedback from course evaluations?

Yes No Comment:

Reviewer:

Signature _____

USUHS GRADUATE COURSE DESCRIPTION FORM

(Please contact the Graduate Education Office (GEO) for original electronic form)

1. Course Title: _____ Number: _____
(Assigned by GEO)

2. Department(s): PMB

3. Instructor(s): _____ Course Director: _____

4. Preferred Academic Quarter:

Winter Spring Summer Fall

5. Requested Hours: (PLEASE SPECIFY CREDIT HOURS OR HOURS PER WEEK)

Lecture hrs/wk Conference/Seminar hrs/wk Laboratory hrs/wk

Examination hrs/wk Other (distance learning) hrs/wk

6. Suggested Quarter Credit Hours: (SEE COMMENT SECTION)

7. Textbooks:

8. GENERAL COURSE OBJECTIVES AND COURSE DESCRIPTION:

9. PROPOSED TOPIC OUTLINE: (Use additional sheets if necessary)

10. PREREQUISITES FOR COURSE:

11. PREFERRED NUMBER OF STUDENTS: _____ Maximum

12. GRADING CRITERIA: (Including request for Credit/No Credit Status and statement on class attendance/participation as a factor of final grade, if appropriate.)

13. Reason for submission: New Course Revised Course

APPROVED: _____ DATE: _____
(Department Chairperson/Program Director)

APPROVAL BY THE ASSOCIATE DEAN FOR GRADUATE EDUCATION

Associate Dean for Graduate Education Date

COMMENTS:

ALL COURSES REQUIRE INSTRUCTOR APPROVAL.
TO DETERMINE SUGGESTED QUARTER CREDIT HRS, USE THE FOLLOWING FORMULA:
1 hr/wk of Lecture or Conf/Seminar = 1 qtr credit hr; 3 hr/wk of Laboratory = 1 qtr credit hr

APPROVED: _____
Dean, School of Medicine Date

PMB Suggested Syllabus Template

USU PMO xxx

Title of Course

Pre-Fall Session/Fall/Winter/Spring Quarter 2007

Class Meeting Location: (room #)

Class Meeting Days/Time: (could also be addressed below in “Class Schedule”)

Course Introduction/Description/Goals: overview of the course content/emphasis

Learning Objectives: (these are broad, overarching themes based on the PMB Core Learning Objectives and the Guide for Writing Quality Learning Objectives).

“Upon completion of this course, the student will be prepared to: X, Y, Z” or

“Completion of this course will allow the student to demonstrate: X, Y, Z”

If specific ASPH Competencies or PMB Core Learning Objectives are included in this paragraph, identify them in **bold print** or with asterisk (*). If the Competencies/Core Learning Objectives are not included in the paragraph, list them immediately after the paragraph. Other appropriately designed Learning Objectives more specific to the course are, of course, encouraged.

Textbooks(s) – (include author/editor(s), title, edition, publisher, year, ISBN number)

Required texts:

Any additional/supplemental reference(s): books? handouts?

Any on reserve at the Learning Resource Center?

Any readings posted on *Blackboard*?

Pre-requisite Course(s): none; or list

Course Director(s)/Instructor(s): name, contact information (office room number, phone, and e-mail), office hours (could also be addressed below in “Policies.”)

Grading System: Letter Grade or Pass/Fail by request

Evaluation Criteria:

Example -- Letter grade based on:

Class Attendance and Participation: 20%

Blackboard Assignments: 20%

Paper/Project/Presentation: 30%

Exam (open book or closed book?): 30%

Policies: expectations for required readings, attendance, taking exams, office hours (appointments only? appointments made 24 hours in advance?)

Blackboard™ Usage: *Blackboard* is used in all courses. The student is responsible for checking *Blackboard* for any course updates, announcements, and evaluations.

Class Schedule: (either a list, or in table format – see below) Include date/day/time, topic (includes examination, assignments, or papers due), instructor, specific class objectives, assigned readings, etc.

CLASS DATE	TOPIC	INSTRUCTOR	OBJECTIVES	READINGS/Assignments from required text/reference