



"This is a humanitarian issue,  
it's time to start the moral cycle."

**- Bill Gates,**

Time Global Health Summit 2005

### Distinctive Features

- 18 months, full-time, residential course
- Intensive laboratory sessions to gain experience of IT applications in Public Health research and interventions
- World-class infrastructure facilities
- National and international placement opportunities
- Experienced Faculty from India and abroad
- Stipend for Field Experience
- Availability of need based merit scholarships
- Availability of bank loan assistance

## MASTER in PUBLIC HEALTH


with concentration in

### Global Health Informatics

#### The Program

The International Institute of Information Technology's (I<sup>2</sup>IT) School of Public Health, offers Master in Public Health (MPH). This full-time 18-month program provides a set of skills and principles essential for students who intend to apply their training in a professional setting, provide leadership in a specific health specialty, and improve and protect the health and well being of populations. All MPH students complete the course work which is designed to prepare public health professionals to actively and effectively contribute to populations, based on culturally appropriate innovative approaches to solve current and emerging public health problems.

This course is designed to develop a cadre of **Public Health Informaticians** who would manage programs and monitor outcomes, develop, evaluate and implement new automated Public Health Information Systems. This new breed of practitioners would have high-end Techno-Managerial skills to adapt and support existing Information Systems, effectively use them in health surveillance, knowledge processing for decisions and advocacy. They would have adequate knowledge and skills to develop interoperable health information systems and also design appropriate public health interventions.



Public Health Informatics is a rapidly evolving and multi-disciplinary area. The major challenges to Public Health Informatics today is to develop coherent, integrated regional & national public health information systems; develop closer integration between public health and clinic care and address the pervasive concerns about the impact of information technology on security, confidentiality and privacy. The combination of competencies in Public health and Information technology is capable of meeting these challenges.

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- The MPH (Global Health Informatics) graduate will be able to provide leadership in a specific health specialty that is ethical, population focused, culturally appropriate and uses innovative approaches to public health problems.
- Demonstrate the application of public health skills and knowledge by completing a comprehensive special project.
- Applies knowledge of core areas and specialized public health techniques, practices, policies, and programs to improve the health and well being of all populations.
- Demonstrate a commitment to improve the health of communities by working with the stakeholders to solve public health problems.

### Competencies expected of public health practitioners

- Policy Development / Program Planning Skills
- Analytic assessment Skills
- Communication Skills
- Cultural Competency Skills
- Community Dimensions of Practice Skills
- Basic Public Health Sciences Skills
- Financial Planning and Management Skills
- Leadership and System Thinking Skills

### Field Experience

The field experience is considered a practicum for the curriculum, serving as a structured and significant educational experience that takes place in an agency, institution, or community in a developing country, and under the supervision of site supervisors and the guidance of the student's Faculty Advisor

# Curriculum

## Bridge Courses

All students would have to undergo the following bridge courses in the areas of Public Health and Information Technology

AST 004 Introduction to Programming Languages (2 credits)

AST 005 Information Systems Architecture and Productivity Tools (1 credit)

PHC 513 Survey of Human Diseases (1 credit)

## Public Health Core Courses - 24 Credits

- **PHC 554 Introduction to Public Health (3 credits)**  
This course provides the student with a broad overview of Public Health that includes but is not limited to the basic definition of public health, the biomedical basis of public health, social and behavioral factors in health interactions, environmental issues, medical care issues and the future of public health.
- **PHC 609 Epidemiology (3 Credits)**  
Study of epidemiological methods to evaluate the patterns and determinants of health and diseases in population
- **PHC 623 Biostatistics (3 Credits)**  
This module will cover concepts and methods of statistics applied to public health issues. The module gives in depth analysis of statistical methods appropriate to health studies.
- **PHC 627 Social and Behavioral Sciences applied to Public Health (3 Credits)**  
A review of conceptual, empirical and theoretical contributions of social and behavioral sciences as they contribute to an understanding of health and illness.
- **PHC 638 Health Policy Management (3 Credits)**  
General principles of planning, management, evaluation and behavior of public and private health care organizations at the local, state and national levels.
- **PHC 667 Environmental and Occupational Health (3 Credits)**  
The study of major environmental and occupational factors that contribute to development of health problems in industrialized and developed countries
- **PHC 685 Public Health Informatics (3 Credits)**  
This module is intended to help the student develop an understanding of public health information systems at various levels. The course provides an overview of the principles of informatics, IT regulations and examples of practice in a public health context.
- **PHC 695 Principles of Health Services Management (3 Credits)**  
This module will examine, analyze and review the management function of a health services organization. The course intends to increase the students' awareness of the role of management, its components, and leading practices. The students will study how core decision processes operate, how performance is measured, and how processes are improved. The course will devote time and attention to issues related to quality of care, patient satisfaction, and measuring clinical outcomes





## Information Technology Core Courses - 20 Credits

- **AST 502 Database Technologies (3 Credits)**  
This module focuses on the theory of database engineering. The module includes topics like file processing, data structures, database processing, fundamental concepts of the relational model, normalization of data, database integrity issues, database design, SQL and an overview of the functions of a database management system
- **AST 503 Database Application Development (3 Credits)**  
This module discusses concepts like database transaction handling and concurrency control. It also focuses on the application development features of the databases. Programming features of a database like PL/SQL, PSP, features for web applications, Java-stored procedures and SQLJ are covered.
- **AST 504 Data Warehousing and Data Mining (3 Credits)**  
This module covers the fundamentals of data warehousing structure and the issues involved in planning, designing, building, populating and maintaining a successful data warehouse. This module also includes data mining techniques and algorithms to extract information and patterns from public health data warehouses using SAS software.
- **AST 519 Web Technologies and Applications (2 Credits)**  
This module covers Web Application Architecture, HTML, DHTML, scripting languages and ASP.
- **AST 601 Object-oriented Analysis and Design using UML (3 Credits)**  
This module focuses on the major techniques of the Unified Modeling Language (UML), object-oriented analysis and design notation. The topics covered include object models, analyzing the system requirements, modeling concepts provided by UML, analysis and documentation of software designs using the unified process, behavioral designs, design patterns to refine analysis and models, implementation, testable and adaptable designs
- **AST 607 XML Technologies and Applications (3 Credits)**  
This module introduces XML, its structure and applications, related technologies and their use for data management application in public health settings. The topics covered include DTD, schema, messaging, client and server side XML, XSL, SOAP etc.
- **AST 610 Software Engineering & Project Management (3 Credits)**  
This module provides a comprehensive analysis of software engineering techniques and shows how they can be applied in practical software projects with an object-oriented approach. This module extensively covers software process technology, system integration, requirements management, software project management, verification and validation, risk analysis; pattern based dependable systems development, distributed system engineering and legacy systems.

## Seminars, Field Experience and Project - 10 Credits.

- **PHC 904 Seminar in Public Health (1 Credit)**  
Facilitates interaction of faculty, students and selected health professionals on public health issues and research. The seminar will focus on analysis of case studies, ethical, legal and policy issues in public health informatics within a global environment
- **PHC 915 Supervised Field Experience (6 Credits)**  
Internship in a public health agency or setting. Six credits require at least 18-20 hours per week for 4 months in a supervised position in a health agency.
- **PHC 923 Special Project (3 Credits)**  
In-depth study of a selected issue in public health. A topic could be selected according to the student's needs and interests. This paper may be an outcome of the student's field experience.

## Total Credits for the Program - 58 Credits