

Online Health Informatics Course

COURSE DESCRIPTION

What's Inside?

Overview	2
Online Health Informatics Course Core Competencies	3
Who Are Our Students?	3
What Are the Awards and Merits of This Course?	4
Course Outline	6
For the Health Professionals Track (HI 101)	6
For the IT Professionals Track (HI 102)	9

To all Doctors, Nurses, Allied Health and IT Professionals with interest in [Health Informatics](#).



De La Salle University-Manila

in partnership with

eHealth Records International–Philippines, Inc.

offers a

Health Informatics Course

- ✓ Online
- ✓ For Healthcare Professionals
- ✓ For IT Professionals

Course Starts: Dec. 2, 2013
Course Duration: 13 Weeks
Registration Period: until Nov. 18, 2013

For more information, please visit the course area in our website.
www.harmoniph.com

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Overview

The Online Health Informatics Course is designed in a cloud-based learning and collaboration platform which aims to provide increased competency and knowledge in Health Informatics, particularly in the hospital environment. As this course is built through the Canvas Learning Management System, it provides students flexibility of time at their preferred location, as long as they have internet connection. The course can be accessed through widely used web browsers or through the Canvas app in Google Play and App Store, available for free.

The course also provides beginners in the Health Information Technology (IT) industry a solid foundation of the principles of health informatics and data collection before exposing them to hands on cloud computing systems. Students are expected to spend, at the very least, 4 hours per week for 13 weeks. The course includes 10 online modules embedded with engaging activities, 1 midterm exam and a final exam.

The Online Health Informatics Course is a continuing education program of **Electronic Health Records International – Philippines, Inc. (EHRI-Ph)** in partnership with **De La Salle University – Manila** through the Consulting and Education Center. The course has two tracks: (1) the HI Course for Health Professionals (HI 101) and (2) the HI Course for IT Professionals (HI 102).

Online Health Informatics Course Core Competencies

1. Demonstrate basic literacy in computers, software, and network infrastructure through an understanding of technical specifications found in Electronic Health Records
2. Narration of the Philippine Health Care Delivery System
3. Analysis of performance and/or operational dashboards of hospitals (Evaluation of health information systems)
4. Integrate the different health informatics principles towards an understanding of the value and impact of hospital information systems to clinical and administrative environments
5. Integrate change management protocol design and implementation
6. For health professionals, to effectively use Electronic Health Records in support of a evidence-based clinical decision making approach in the management of patients
7. For health professionals, maintaining patient-provider relationship while using Electronic Health Records for information entry and retrieval
8. For IT professionals, to operate a cloud-based EHR software through secure health information exchange protocols
9. Strategize methods of decreasing points of data entry failure
10. Perform basic training and support for future employees of the student’s hospital/clinic to ensure a sustained use of the hospital information system

Who Are Our Students?

Healthcare Professionals such as:

- ✓ Physicians, nurses, technicians, pharmacists and administrative personnel with interest in Health IT, encompassing organizational hierarchy—from hospital/facility/organization executives, managers, staff members and even private care providers or volunteers

IT Professionals such as:

- ✓ Software developers, mobile app developers, computer programmers, computer engineers and other related computer studies professionals with interest and little background on hospital operations
- ✓ Technical Support or IT Staff currently working on a hospital environment

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Healthcare Professionals will benefit from this course as they explore innovative opportunities to learn about information technology in the healthcare system and find this learning relevant to their work, building their capacity for personal development and organizational advancement.

With HI 102, **IT Professionals** can tailor their technical expertise to skills that are relevant in the healthcare system or in the hospital working environment. They will be provided with more hands-on experience on software design and development of health and hospital information systems.

What Are the Awards and Merits of This Course?

A **Certificate of Completion** provided by DLSU-Manila and EHR International-Philippines Inc. will be awarded to students who demonstrate proficiency in the areas covered by the course and should assist students in obtaining and retaining employment in healthcare institutions that are adopting EHR platforms.

A **Certificate of Distinction** will be awarded to students who demonstrate knowledge, skills and competence in completing health informatics capstone projects in actual hospital information systems and implementation sites. The capstone projects are intensive, active learning projects, which will allow students to learn from actual HIS and/or EHR design, deployment and/or implementation. The areas of focus may differ depending on the students' abilities and opportunities which range from user requirements analysis, user experience design, project management, cloud-technologies, mobile health, training and education. Only selected and qualified students will be invited to participate for a capstone project based on their performance in the online course, participation in activities, and attitude towards the exciting field of health informatics.

Organizational Impact

1. Learn concepts and theories which can be a benchmark for practical application in your workplace
2. Explore ideas for innovation for your firm's strategic business development
3. Favourable behavioural change towards the promotion of a culture of health information
4. Collaborative spirit in helping end users of the hospital information system to adopt the innovation
5. Vigilance towards a secure entry and retrieval of electronic patient information

Personal Impact

1. Opens up advanced career opportunities other than current expertise
2. Fulfills the need for credible continuing education despite time and location constraints
3. Improve your ability to formulate and contribute innovative ideas for health IT
4. Strengthens your capacity to manage a health IT initiative or project
5. Increases your capacity not just to make technical decisions but also decide on a business management level

Course Outline

For the Health Professionals Track (HI 101)

MODULE 1 - OVERVIEW OF HEALTH INFORMATICS

- a. Define health informatics and its sub-specialties
- b. Visualize the global health informatics ecosystem
- c. Explain the Philippine health information system
- d. Provide a high level understanding of health information technology concepts that will be encountered in health informatics
- e. Distinguish practical information technology concepts that will provide value to health informatics implementations and research
- f. Describe current trends in health information technology
- g. Active group discussion on Health IT products observed in your line of work

MODULE 2 - STANDARDS AND INTEROPERABILITY

- a. Explain various standards for health information exchange (HIE) recognized around the globe such as ICD, SNOMED, RxNorm, LOINC, HL7, to name a few
- b. Cite other existing and actively used standards across countries
- c. Integrate the significance of standards for HIE and Hospital Information Systems Interoperability
- d. Analyse concepts learned and identify the discrepancies in the current healthcare system when it comes to standards and interoperability

MODULE 3 - HOSPITAL INFORMATION SYSTEM AND ENTERPRISE RESOURCE PLANNING

- a. Increase baseline knowledge regarding hospital information systems and enterprise resource planning
- b. Attain hands-on experience on Enterprise Resource Planning software
- c. Comparing company propriety software vs. open source enterprise resource planning

MODULE 4 - HEALTH INFORMATICS IN THE CLOUD

- a. Demonstrate the functionalities of a cloud-based Electronic Health Record
- b. Identify stakeholders of an electronic health record, and explain the value an electronic health record imparts on these stakeholders
- c. Highlight key components of comprehensive electronic health records and their importance to the improvement of patient care
- d. Operate an electronic health record with test patients using the cloud-based EHR

MODULE 5 – ETHICS, PRIVACY, AND SECURITY CONCEPTS IN HEALTH INFORMATICS

- a. Define protected health information and discuss the processes by which entities secure protected health information
- b. Examine the e-Health code of ethics and illustrate examples of its applicability in real-life settings
- c. Explain the Health Information Portability and Accessibility Act (HIPAA), its guidelines and implications in Philippine implementations of hospital information systems
- d. Identify Philippine legislative policies and administrative orders that protect health information; identify existing gaps to the Philippine legal framework for health information technology
- e. Discuss security concepts and ethical guidelines as covered in cloud-based Electronic Health Records and in telemedicine.

MODULE 6 - TELEMEDICINE

- a. Explain telemedicine and its role in a more efficient health information exchange and improvement of patient care
- b. Demonstrate appropriate technology for the delivery of health care services using telemedicine
- c. Enumerate existing telemedicine efforts by different organizations in the Philippines
- d. Provide an avenue for discussion on the legal and ethical implications for the use of telemedicine in the delivery of health care services

MODULE 7 - DATA MINING, ANALYTICS AND VISUALIZATION

- a. Explain telemedicine and its role in a more efficient health information exchange and improvement of patient care
- b. Demonstrate appropriate technology for the delivery of health care services using telemedicine
- c. Enumerate existing telemedicine efforts by different organizations in the Philippines
- d. Provide an avenue for discussion on the legal and ethical implications for the use of telemedicine in the delivery of health care services

MODULE 8 - CHANGE MANAGEMENT IN HEALTH INFORMATICS IMPLEMENTATIONS

- a. Describe the diffusion of innovation theory, and illustrate methods of successful diffusion of hospital information systems.
- b. Identify and explain learning and change theories that are encountered on hospital information system implementations
- c. Provide a high-level comprehension of health information system evaluation and its applicability to real-life situations
- d. Formulate a basic evaluation framework for health information systems

MODULE 9 - OWNERSHIP OF HEALTH INFORMATION SYSTEMS

- a. Plot a strategic planning framework based on related references.
- b. Create an efficient project management charter, defining the roles of stakeholders.
- c. Provide a high-level comprehension of the strategy plan and its applicability to real-life situations
- d. Formulate a basic evaluation framework for health information systems

MODULE 10 - SPECIAL TOPICS IN HEALTH INFORMATICS

- a. Explain telemedicine and its role in a more efficient health information exchange
- b. Discuss the trends of using mobile devices for health care services delivery and efficient information exchange
- c. Define consumer health informatics, and provide examples of consumer health applications that contribute to the overall realization of the community on health informatics

- d. Describe practical concepts in Open Source technology, and how open source contributes to hospital information systems
- e. Appraise open source software applications which can be of help in the roles that the students have in their respective health institutions

For the IT Professionals Track (HI 102)

MODULE 1 - BASIC NETWORK CONCEPTS

Description: This module will teach the students about the basic of network concepts used in health informatics.

Required modules: None

Number of hours: 4 hours

- A. Open systems interconnect model
- B. Network requirements
 - a. Physical network requirements
- C. Network topologies
- D. Which network setup befits a hospital?
- E. Network management
- F. Communication technologies
 - a. Internet telephony

MODULE 2 - AMAZON WEB SERVICES PART I – INTRODUCTION

Description: This module will teach the students about the basic of Amazon Web Services and the common services used in health care applications

Required modules: None

Number of hours: 4 hours

- A. Introduction to Amazon web services
 - a. EC2
 - b. Elastic beanstalk
 - c. S3

- d. Cloudfront
- e. IAM
- f. Redshift
- B. Configuring the AWS account
 - a. Free tier package
 - b. Pricing
- C. Configuring the EC2 environment
 - a. What servers are available
 - b. Amazon marketplace
 - c. Amazon EC2
- D. Configuring the S3 environment
 - a. Using S3 with cloudfront

MODULE 3 - MONITORING THE LINUX ENVIRONMENT

Description: This module will focus more on the details of monitoring the Amazon EC2 instance using either the AWS dashboard or SSH

Required modules: Module 2

Number of hours: 4 hours

- A. Monitoring server activity
- B. Setting up Amazon alert systems
- C. Configuring Elastic beanstalk
- D. SSH access to Amazon instances

MODULE 4 - OPENERP TRAINING

Description: This module will concentrate on the installation of OpenERP in a server environment, as well as its configuration.

Required modules: None

Number of hours: 4 hours

- A. Installing OpenERP in a Windows Operating System

- a. Preparing for the Instance Installation
 - i. Generating PPK File
 - ii. Accessing PPK File\
- b. Accessing Amazon
- c. Downloading Package Files from Amazon
- d. Installing PostgreSQL
- e. Installing Python
- f. Configuring PGAdmin
- g. New Server Registration
- h. Assigning New Databases Using PgAdmin
- i. Creating Back-up in TAR Format

MODULE 5 - OPENERP PART II

Description: This is a continuation of the initial setup of OpenERP at module 4

Required modules: module 4

Number of hours: 4

A. Configuring OPENERP

- a. Creating New Databases
- b. Assigning Admin
- c. Installing Applications
- d. OpenERP Application Configurations
 - i. Accounting
 - ii. Warehouse
 - iii. Purchases
 - iv. Manufacturing
- e. Assigning New Users
 - i. Access Rights
- f. Assigning New Groups

i. Access Rights

MODULE 6 - SOFTWARE DEVELOPMENT TRACKING

Description: This module will deal on how to monitor software development processes using software as a service tools

Required modules: 4 and 5

Number of hours: 4

- A. Introduction to the software development life cycle
- B. Software development agile methodologies
- C. SAAS tools for monitoring software development
 - a. Bugtrackr
 - b. Assembla
- D. How to use Bugtrackr
- E. How to use Assembla

MODULE 7 - PROJECT MANAGEMENT

Description: This module will focus more on available SAAS for IT project management

Required modules: None

Number of hours: 4

- A. Introduction to project management
- B. Project risk management discussion
- C. SAAS tools for project management
 - a. Basecamp
- D. How to use basecamp

MODULE 8 - QUALITY ASSESSMENT AND PROCESS IMPROVEMENT METHODS IN SOFTWARE DEVELOPMENT

Description: This module will focus on how to use QA and QI methods specifically for health care related software applications and IT projects.

Required modules: 4 and 5

Number of hours: 4

- A. Configuring the testing environment
- B. Developing use cases
- C. Regression testing
- D. Full cycle testing

MODULE 9 - NETWORK SECURITY USING OPEN SOURCE SOFTWARE

Description: This module will discuss the use of Untangle and other Open Source Software tools to create a secure environment for health information exchange

Required modules: 4 and 5

Number of hours: 4

- A. Introduction to information security
- B. Introduction to Open Source Software
- C. Untangle software for increasing network security
 - a. Creating a virtual machine for untangle
- D. How to use VPN

MODULE 10 - FORMULATING AN INFORMATION SYSTEMS STRATEGIC PLAN

Description: This module will focus on the administrative aspects in becoming a leader in the technical field of your hospital or health-related environment. The information systems strategic plan, or ISSP, serves to guide the health organization into an effective and efficient way of managing IT related services and at the same time employing industry standards for quality IT services in the working environment.

Required modules: None

Number of hours: 4

- A. What is an ISSP
- B. Components of an ISSP
- C. Creating an ISSP

PRACTICUM

Description: The practicum session is dedicated towards assessing the capacity of the student in deploying and maintaining a health IT software implementation environment, from determining the requirements of an organization, setting up IT requirements, deploying applications, and sustainable management of the projects. Practicum part 1 would be presentation of the planning and designing phases of the IT project that has been assigned along in this course. The students would also have to present their project, the IT environment that they have created, along with the necessary components, project management aspects, and monitoring tools to ensure continuity of their setup.

Required modules: All modules

Number of hours: 4