**THE COLLEGE OF THE BAHAMAS**

**Course Outline**

<table>
<thead>
<tr>
<th>Title:</th>
<th>Healthcare Informatics</th>
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<tbody>
<tr>
<td>Abbreviation and Number:</td>
<td>NURS418</td>
</tr>
<tr>
<td>AB Paper No.:</td>
<td>13-110</td>
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<tr>
<td>School:</td>
<td>Nursing and Allied Health Professions</td>
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<tr>
<td>Department:</td>
<td>Nursing</td>
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<tr>
<td>Credits:</td>
<td>3</td>
</tr>
<tr>
<td>Course Sequence:</td>
<td>( ) Fall ( ) Spring (X) Fall and Spring</td>
</tr>
<tr>
<td>Hours Per Week:</td>
<td>( 3 ) Lecture ( ) Seminar ( ) Laboratory ( ) Studio ( ) Kitchen</td>
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<tr>
<td>( ) Other (Specify)</td>
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<tr>
<td>Pre-requisite(s):</td>
<td>Third year standing or permission of Chair/Instructor</td>
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<tr>
<td>Co-requisite(s):</td>
<td>None</td>
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**COURSE DESCRIPTION**

Students are introduced to healthcare informatics and how it may be applied to support health care administration, education, clinical practice and research. The role of the Informatician in developing and evaluating health care applications and systems to improve patient outcomes is emphasised.

**SPECIFIC OBJECTIVES**

Upon successful completion of this course, the student will be able to
1) Identify the various types of information systems used within health care institutions;
2) Analyse the role of the informatician;
3) Examine ethical and legal issues involved in the use of computer technology;
4) Evaluate selected theories that influence informatics in health care;
5) Apply informatics to healthcare administration, education, research and practice; and
6) Integrate informatics technology to improve patient care.

**COURSE CONTENT**

I. The Building Blocks of Informatics
   A. Sciences underpinning Informatics
   B. Impact of informatics on professional practice
   C. Role of the health care worker

II. Informatics, Information Science and Information Systems
   A. Informatics
      i. Data information, knowledge and wisdom
      ii. Data acquisition, processing, analysis and synthesis
      iii. Characteristics of information
   B. Information Science
      i. Cognitive
      ii. Communication
      iii. Computer
      iv. Library
      v. Social
      vi. The foundation of knowledge
   C. Information and Systems
      i. Types
      ii. Organizational needs assessment
      iv. Selection of information systems for health care organizations
v. Role of the informatician

III. Perspectives on Nursing Informatics
A. Overview of Nursing Informatics
   i. Key terminologies
   ii. Goals
   iii. Scope and standards
   iv. Metastructures, concepts, and tools
   v. Phenomena
B. Ethics in Nursing Informatics
   i. Code of Nursing Ethics
   ii. Ethical issues
   iii. Policies
   iv. Professional responsibilities
   v. Ethical model for ethical decision making
C. Nursing Informatics Roles, Competencies and Skills
   i. Historical development of nursing informatics
   ii. Evolving roles of nursing informatics practice
   iii. Competencies and skill requirements
   iv. The future of nursing informatics
   v. Role of nursing in the selection process
D. Standardized Terminologies in Nursing Informatics
   i. Approaches to terminologies development
   ii. Languages and vocabularies
      a. Clinical Care Classification (CCC)
      b. International Classification of Nursing Practice (ICNP)
      c. North American Nursing Diagnosis Association International (NANDA-I)
      d. Nursing Intervention Classification (NIC)
      e. Nursing Outcomes Classification (NOC)
      f. Nursing Management Minimum Data Set (NMMDS)

IV. Functional Areas for Nursing Informatics
A. Nursing Administration
   i. Using e-portfolios
   ii. Technology Informatics Guiding Education Reform (TIGER) Initiative
B. Education
   i. Navigating the digital library
   ii. Using Personal Digital Assistants (PDAs)
   iii. Simulation
   iv. Using social networking tools
C. Research
   i. Data Collection
      a. Qualitative: databases
      b. Quantitative: lotus, spreadsheets
   ii. Data Analysis
D. Clinical Practice
   i. Telehealth
ii. Electronic health record
iii. Health information on the Internet

V. Healthcare Informatics Theories
   Theories which influence informatics in health care

VI. Healthcare Information Systems
   A. Goals
   B. Purpose
   C. Types
      i. Dialysis Unit
         Centricity Systems
      ii. Emergency Department
         EDMS – MEDHOST
      iii. Surgical and Perioperative Services
         Horizon Surgical Manager (McKesson)
      iv. Electronic Patient Care Documentation (e-PCD - Siemens)
      v. Electronic Medication Administration Record (eMAR)
      vi. MediTech

VII. Information, Privacy and Confidentiality
   A. Data, information, and knowledge
   B. Privacy, confidentiality, and security
   C. Data storage media
   D. Data integrity and its relevance for health care
   E. Electronic communication

VIII. Security
   A. Threats to information quality, availability, and confidentiality
   B. Security measures designed to protect information

IX. Application
   Designing patient encounter forms using Excel database system
      i. Admission record
      ii. Discharge
      iii. Vital signs
      iv. Pain assessment

ASSESSMENT
Assignments................................. 20%
Presentation............................... 15%
Case Study................................... 25%
Project........................................ 40%
Total.........................................100%
REQUIRED TEXTS

SUPPLEMENTARY READINGS/MATERIALS

WEBSITES
https://www.amia.org/working-group/formalbiomedical-knowledge-representation (AMIA- Knowledge Representation)
http://www.nursingworld.org/npii/terminologies.htm (ANA Recognized Terminologies and Data Element Sets)
http://www.1keydata.com/datawarehousing/data-modeling-levels.html (Conceptual, Logical, And Physical Data Models)
http://www.wrox.com/WileyCDA/Section/id-129433.html (Database Design Basics)
http://hsl.lib.umn.edu/learn/ebp/mod01/index.html (Evidence-Based Practice)
http://www.nanda.org/ (NANDA International: Gateway to the Future of Nursing Languages)
http://www.openclinical.org/knowledgemanagement.html (Open Clinical: Knowledge Management for Medical Care)
http://www.icn.ch/professional.htm or http://www.icn.ch/database2.htm#1 (The International Classification for Nursing Practice)