In the Name of God

Tehran University of Medical Sciences

School of Nursing and Midwifery

Medical Surgical Nursing and Basic Sciences Department

General specifications, plans and headlines of MS program in

Nursing Informatics (MSc Degree)

Title: Nursing Informatics

Degree: MSc

Introduction

Nursing is already a discipline and informatics a specialty within the nursing discipline. The rapid adoption of information technology systems in health care organizations has created a tremendous opportunity for informatics nurse specialists in a wide range ofroles. Nursing informatics brings about learning opportunities for an effective use of information technology in nursing duties to improve clinical nursing care. NI[1] curriculum (1987) and the first NI Master Specialty were offered in 1988; followed by identifying competencies (1998), the first NI summer institute was founded at Maryland University in 1999. There were 500 Nursing Informatics graduates with master degrees at Maryland University from 1988-2010. NI is offered in many universities (mostly in USA) now.

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[1]-Nursing Informatics

Definition

Nursing Informatics is the integration of nursing science, computer science, and information science. Nursing Informatics supports nurses, patients, service recipients, communities, stakeholders, and treatment teams in decision-making to facilitate the achievement of desired outcomes through the use of information structures and processes and information technology. The graduates will be able to carry out evidence-based practice through computer-based health care information systems to improve clinical nursing care. Also graduates will be involve with consumer health informatics, design of educational materials or apps for wellness and disease tracking.

The Aim of the Course

The main objective of the program is to acquire new perspectives on the use of knowledge and information in nursing practice. The students will attain informatics knowledge together with skills in performing the roles of informatics nurse specialists. In future, they will become a contributing member of the nursing informatics community at local, national and international levels.

V**ision**: The School of Nursing and Midwifery, Tehran University of Medical Sciences (TUMS), will offer one of the leading academic programs in nursing informatics and will conduct education and research focused on providing informatics solutions to optimize nursing care outcomes. TUMS will be recognized for leadership and excellence in education, health information technology policy, and nursing informatics applications at national and international levels.

Mission: The mission of the course is enhancing nurses' computer skills, Informatics Knowledge and Informatics skills as well as nursing informatics competencies promoting nursing care quality with the integration of information technology tools in all aspects of nursing profession.

General Competencies (including communicative, interviewing, educational, writing, reporting, critical thinking, problem solving, managerial ones as well as professionalism)

- Development of Communication
- Professional commitment
- Informatics capacity use
- Partnership and teamwork
- Remote Services
- Social justice
- Improved decision-making process
- Interdisciplinary perspective
- Evidence-based nursing
- Project Management
- Creativity and Innovation
- Reporting, evaluation and reform
- Application of theory to practice
- Educational improvement
- Community Research and problem solving strategies

- Information management (collection, organization and retrieval)
- Effective Leadership
- The security, privacy and the rights of patients
- Maintaining human contact with the patient while using technology
- Induction of new paradigm in nursing environment

Specific Competencies and Skills (Special Qualifications)

In this program, students are guided to provide effective services in the field of education, management, research and clinical practice implementing information technology by learning NI competencies as follows:

1. **Computer skills**: Familiarity with and ability to use computer in the following areas

- Informatics tools for the design of nursing care plan and essential applications in nursing diagnosis, interventions and outcomes
- Telecommunications, and the Internet
- Securing nursing computer systems
- Databases and resources related to nursing care
- The application of nursing information management tools for patient education
- Benefiting from remote patient care and monitoring systems
- Using networks for communication, portable electronic systems
- Searching and retrieving patient demographic information
- Entering patient structured data

2- **Informatics Knowledge**: Acquiring knowledge and shaping the attitudes of nursing informatics in the following areas

- Diagnosis of data importance in the nursing care
- Recognition of the limitations of computer design and capacity
- Recognition of the growing acceptance of the use of computers in nursing care
- Recognition of the impossibility of doing some human activities by computers
- Searching for new resources for ethical consideration in nursing decision-making
- Identification of the client's rights in computer information management
- Appreciation of nurses' involvement in the design of nursing care systems
  Selection, implementation and evaluation systems
- Implementation of Information Technology for higher care quality and patient-nurse communication.
- Description of the present manual systems and applications
- Interaction with electronic communication networks
- Convincing nurses that use of computers in nursing requires no programming skills mastery
- Identification of human-computer interaction to enhance care quality
- Retrieving information and literatures for EBN and ethical use

3. **Informatics skills**: Developing the use of informatics tools in the following areas

- Evaluation tools for the quality of health information on the web

- Making use of informatics tools and database obtained through knowledge-based decisions to support patients
- Encouraging the other nurses in contributing to the use of information technology tools in work
- Participating in the selection, design, implementation and nursing systems evaluation process
- Supporting system users, including the clients, nurses and treatment groups
- Correcting some flaws in the nursing care systems
- Recommendation new and useful nursing clinical systems

Educational Strategies, Methods and Techniques

- Educational Strategies: Task-based learning; blended-learning; teacher-centered and student-centered learning; attendance virtual learning; problem-based learning; professional-competency-based learning, and evidence-based learning.
- Methods and Techniques: lecture , question & answer, video clip; journal club; Case presentation; Discussion in small groups, Student seminars and conferences, visits information technology websites; clinical practice in health care fields and nursing.

Student Assessment

- Written assessment [multiple choice questions (MCQ), essay (restricted & extended answer)]; oral assessment (unstructured and structured oral exams); interactive computer test; Practical assessment (projects, Portfolios, scenarios and Logbooks).

Number and Type of Credits and Tables of the Courses (including Core, Management and Informatics Courses)

Total courses: 32

- Core courses (5 credits)
- Management courses (4 credits)
- Informatics courses (23 credits)

Up to 9 credits may be waived if the students have previously taken courses the faculty deems to be equivalent. Work experience in an informatics position also may be included, based on the faculty decision.

Core courses (may be taken in any order)

Lesson code	Lesson name	credits	hours			Pre requisite
			Theory	Practice	sum	
01	Healthcare Information Systems	1	9	17	26	
02	Research Methodology for Evidence Based Practice	2	34		34	

03	Biostatistics for Evidence Based Practice	2	34		34	
Total Core courses credits: 5						

Management courses may be taken in any sequence:

Lesson code	Lesson name	credits	hours			Pre requisite
			Theory	Practice	sum	
04	Entrepreneurship Management in Nursing	2	34		34	
05	Nursing management and leadership	2	34		34	
Total Management courses credits: 4						

Informatics courses

Lesson code	Lesson name	credits	hours			Pre requisite
			Theory	Practice	sum	
06	Fundamentals of Nursing Informatics	1	17		17	
07	Nursing Informatics Foundational Concepts	1	17		17	
08	Technology Solutions for Generating Knowledge in Nursing Care	2	34		34	06
09	Information Management Systems in nursing	1	17		17	
010	Advanced Nursing Informatics systems	2	17	34	51	06, 09
011	Quality Improvement and Patient Safety	2	34		34	
012	Nursing Database Systems: Analysis, Design and management	2	17	34	51	010, 011
013	Project Management for Healthcare Information Technology	2	34		34	

014	Ethical and Legal Aspects of Health Information Technology	1	17		17	
015	Electronic Education and eLearning	2	34		34	
016	Practicum in Nursing Informatics	3		153	153	012, 013
	Thesis*	4				
Total Informatics courses credits: 23						

***MSc Thesis proposal:**

The thesis proposal explores the rationale for the proposed research and outlines its basic components. The proposal is submitted to the department's research committee members (consisting of a dissertation advisor, department's head, and department education and research representatives) for final evaluation and approval.

Thesis Defense:

The student and the thesis committee are required to comply with the School of Nursing and Midwifery guidelines with regard to preparation of the thesis and meeting deadlines for graduation. During the viva, the jury committee will thoroughly examine the student's knowledge in the content area of the research.

Flexible learning from anywhere:

- This Nursing Informatics program can be completed entirely online.
- Your advisor will develop an individualized plan of study that fits your schedule.
- Advisors can connect with you via email, telephone, skype, or other internet based features or in person.
- For the required practicum, you and your practicum instructor will arrange a mutually agreeable site in a location convenient to you and confirm the selected site with your advisor and school of nursing and midwifery, TUMS. Thesis can be done based on the data gathered through the practicum.

Ethical issues

The graduates should,

- Observe the Patient's Bill of Rights* when working with the patients.
- Strictly observe Biosafety and Patient Safety Rules* concerning the patients, personnel and workplace.
- Observe the Rulebook for Dress Code*.
- Carefully preserve resources and equipment.

- Truly respect faculty members, the staff, classmates and other students and work for creating an intimate and respectful atmosphere.
- Observe social and professional ethical considerations* in criticism.

* Will be set out by the Educational Departments and will be available to the students.

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