



**Doctorate Program**  
**1<sup>st</sup> semester 2<sup>nd</sup> Term**  
**Evaluation Course – 02809**

# **Term Paper Activity**

**Prepared by**

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**Under Supervision of**

Prof. Effat Elkarmalawy.

Prof. Enas Helmy.

Prof. Heba Ahmed.

Faculty of Nursing  
Cairo University  
2025 / 2026

### Staff Distribution on Tasks

Tasks	Staff Name
Prepare Course Specification	All Students
Prepare Exam Blueprint	All Students
Prepare the Exam and Its Model Answer	All Students
Design the Google Drive Link	All Students

**Faculty of Nursing - Cairo University**  
**Academic year: 2025/2026**  
**(Final Exam 1st Term)**

<b>Academic level: 3<sup>rd</sup></b> <b>level</b> <b>Program: Competency</b> <b>bylaw 2023-2024</b>	<b>Course name/code:</b> <b>Nursing</b> <b>Informatics</b> <b>NUR303</b>	<b>Time: 2hrs.</b> <b>Date:21/1/2026</b>	<b>Total</b> <b>marks:</b> <b>50</b>	<b>No. of exam</b> <b>pages:7</b> <b>No. of</b> <b>questions: 25</b>
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**General exam instructions for the students:**

- **Answer section 1, 2, 3 in the bubble sheet and section 4, 5 in the allowed space.**
- **Using only blue pen**
- **Not allowed to use corrector pen**

**Section I. Read the Following Questions Carefully and Select the Correct Answer (5 Marks, 1 Mark Each):**

**1-A nurse leader analyzing staffing efficiency would most appropriately use:**

- A. Clinical Decision Support Systems
- B. Nursing Workload Measurement Systems
- C. Telehealth service delivery Platforms
- D. Educational Simulation Tools

**2- Which system can use to reduce medication errors by using informatics:**

- A. Personal Health Record (PHR)
- B. Bar-Coded Medication Administration
- C. Learning Management System
- D. Nurse Scheduling Software

**3-Nursing informatics is a specialty that integrates three fields of sciences. Involve:**

- A. Nursing, computer and information
- B-.Health, computer and environment
- C. Data, knowledge and information
- D. Nursing, health and technology

**4-Which from the following one disadvantage of electronic medical records:**

- A. Avoid illegible record
- B. Increase medical errors
- C. Duplicate medical procedure
- D. Require extensive training

**5-Which of the following considered one of computer system limitation:**

- A. Does not take its own decisions.
- B. Has multi-processing features
- C. Has versatile nature
- D. Does not get tired or fatigued

**Section II. True or False questions - Indicate whether each statement is True or False and correct the false statement (5 Marks, 1 Marks Each):**

6-Informatics supports decision-making by transforming data into knowledge rather than storing information ( )

.....

7-Bar-coded medication systems primarily enhance workflow efficiency rather than patient safety. ( )

.....

8- Increased use of health technology automatically improves nursing care quality.( )

.....

9- Consumer Health Informatics focuses exclusively on healthcare providers' use of technology.( )

.....

10- Ethical nursing informatics practice requires balancing patient privacy with accessibility of information. ( )

.....

**Section III. Match Column A (Nursing Informatics concepts) with the Correct Answer from Column B (Primary Purpose in nursing practice) (5 Marks, 1 Mark Each)**

<b>Column A: Nursing Informatics concepts</b>	<b>Column B: Primary Purpose in nursing practice</b>
11-Electronic Health Record	A. Develops clinical reasoning and decision making in a safe learning environment
12-Telehealth Nursing Services	B. Analyzes nursing activities to support staffing and resource allocation decision
13- High- Fidelity Patient Simulation	C. Provides integrated patient data to support continuity of care across settings
14-Consumer Health Informatics	D. Delivers nursing care and follow up services to patients at a distance
15- Health Informatics Interoperability	E. Enables patient to access health information and actively participate in the care
	F. Allows health information exchange between different healthcare systems

**Section IV. Short Answer Questions (10 Marks, 2 Marks Each):**

1. Mention **two** applications of nursing informatics in nursing education.

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.....

2. List **four** components of the "Metastructure" of Nursing Informatics.

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3. Mention **two** advantages of electronic health record

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4. Enumerate **four** types of the health information technology

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.....  
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5. Mention **two** roles of nurse leader in interoperability

.....  
.....

**Section V. Essay Questions (25Marks, 5 Marks Each):**

1. Discuss types of cyber security categories.





**Doctorate Program**  
**1<sup>st</sup> semester 2<sup>nd</sup> Term**  
**Evaluation Course – 02809**

# **Term Paper Activity**

## **(Model Answer)**

**Prepared by**

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2025 / 20

**Faculty of Nursing - Cairo University**  
**Academic year: 2025/2026**  
**(Final Exam 1st Term)**

<b>Academic level: 3<sup>rd</sup> level</b> <b>Program: Competency bylaw 2023-2024</b>	<b>Course name/code:</b> <b>Nursing Informatics NUR303</b>	<b>Time: 2hrs.</b> <b>Date:21/1/2026</b>	<b>Total marks: 50</b>	<b>No. of exam pages:7 No. of questions: 25</b>
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**General exam instructions for the students:**

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**Section I. Read the Following Questions Carefully and Select the Correct Answer  
(5 Marks, 1 Mark Each):**

**1-A nurse leader analyzing staffing efficiency would most appropriately use:**

- A. Clinical Decision Support Systems
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- C. Telehealth service delivery Platforms
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**2- Nursing informatics is a specialty that integrates three fields of sciences. Involve:**

- A. Nursing, health and technology.
- B. Health, computer and environment
- C. Nursing, computer and information
- D Data, knowledge and information.

**3-Which system can use to reduce medication errors by using informatics:**

- A. Personal Health Record (PHR)
- B. Bar-Coded Drug Administration
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**4-Which from the following one disadvantage of electronic medical records:**

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- A. Does not take its own decisions.
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- C. Has versatile nature
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**Section II. True or False questions - Indicate whether each statement is True or False and correct the false statement (5 Marks, 1 Marks Each):**

6-Informatics supports decision-making by transforming data into knowledge rather than storing information ( T )

.....

7-Bar-coded medication systems primarily enhance workflow efficiency rather than patient safety. ( F)

**Correction:** Bar-coded medication systems primarily enhance patient safety.

8- Increased use of health technology automatically improves nursing care quality.( F)

**Correction:** Health technology improves care quality only when used effectively.

9- Ethical nursing informatics practice requires balancing patient privacy with accessibility of information. (T )

.....

10- Consumer Health Informatics focuses exclusively on healthcare providers' use of technology.(F )

Correction: Consumer Health Informatics focuses on patients' use of technology

**Section III. Match Column A (Nursing Informatics concepts) with the Correct Answer from Column B (Primary Purpose in nursing practice) (5 Marks, 1 Mark Each).**

<b>Column A: Nursing Informatics concepts</b>	<b>Column B: Primary Purpose in nursing practice</b>
11-Electronic Health Record(C)	A. Develops clinical reasoning and decision making in a safe learning environment
12-Telehealth Nursing Services (D)	B. Analyzes nursing activities to support staffing and resource allocation decision
13- High- Fidelity Patient Simulation (A)	C. Provides integrated patient data to support continuity of care across settings
14-Consumer Health Informatics (E)	D. Delivers nursing care and follow up services to patients at a distance
15- Health Informatics Interoperability (F)	E. Enables patient to access health information and actively participate in the care
	F. Allows health information exchange between different healthcare systems

#### Section IV. Short Answer Questions (10 Marks, 2 Marks Each):

1. Mention **two** applications of nursing informatics in nursing education.
  - **E-learning platforms**
  - **Virtual simulation tools**
2. List **four** components of the "Metastructure" of Nursing Informatics.
  - **Data**
  - **Information**
  - **Knowledge**
  - **Wisdom**
3. Mention **two** advantages of electronic health record
  - **Improves data accessibility**
  - **Enhances continuity of care**
4. Enumerate **four** types of the health information technology
  - **Electronic Health Records**
  - **Clinical Decision Support Systems**
  - **Telehealth systems**
  - **Nursing Information Systems**
5. Mention **two** roles of nurse leader in interoperability
  - **Promote standardized documentation**
  - **Support staff training**

#### Section V. Essay Questions (25Marks, 5 Marks Each):

1. Discuss four types of cyber security categories.
  - **Network security:** is the practice of securing a computer network from intruders, whether targeted attackers or opportunistic malware.
  - **Application security:** focuses on keeping software and devices free of threats through the system update of the security software (utility programs).
  - **Information security:** protects the integrity and privacy of data, both in storage and in transit.
  - **Operational security:** includes the permissions users have when accessing a

network and the procedures that determine how and where data are accessed

- **Disaster recovery** and business continuity

2. Analyze the role of the information technology on improving quality of care.

**Information technology improves quality of care by:**

- **Enhancing patient safety:** Alerts for allergies, medication interactions, and abnormal lab results reduce errors.
- **Supporting evidence-based practice:** Provides access to guidelines and research for informed decisions.
- **Improving efficiency:** Streamlines documentation and communication, saving time for direct patient care.
- **Facilitating continuity of care:** Real-time access to patient data enables coordinated care across healthcare teams.
- **Enabling quality monitoring:** Electronic records allow tracking of outcomes and performance for quality improvement.

3. Discuss the challenges faced by nurses when using health information technology in clinical settings.

**Nurses face several challenges when using HIT, including:**

- **Technical issues:** System errors, slow performance, or software glitches can interrupt patient care.
- **Limited training:** Nurses may not receive sufficient training, affecting their confidence and efficiency.
- **Time constraints:** Electronic documentation can be time-consuming, reducing time for direct patient care.
- **Resistance to change:** Some nurses may prefer paper-based records and find adapting to technology difficult.
- **Workflow disruption:** Poorly integrated systems can cause duplicated tasks and reduce efficiency.
- **Data privacy concerns:** Protecting patient information is critical and can be challenging.

4. Explore the legal and ethical issues of nurses when using health information technologies.

Nurses face several legal and ethical considerations when using HIT:

- **Confidentiality and privacy:** Ensuring patient data is protected and shared only with authorized personnel.
- **Data security:** Preventing unauthorized access, breaches, or misuse of electronic records.
- **Accuracy of documentation:** Maintaining truthful and complete records to prevent legal consequences.
- **Informed consent:** Ensuring patients understand how their data is collected, stored, and used.
- **Professional accountability:** Nurses are responsible for proper use of HIT in compliance with laws and ethical standards.

5. Describe the impact of the information technology on nursing documentation within healthcare settings.

**Health information technology positively affects nursing documentation by:**

- **Improving accuracy and legibility:** Reduces errors caused by handwritten records.
- **Enhancing accessibility:** Patient information can be accessed in real-time by authorized staff.
- **Increasing efficiency:** Templates and automated functions save time and reduce repetitive tasks.
- **Supporting clinical decisions:** Alerts and reminders help prevent errors and guide patient care.
- **Facilitating quality improvement:** Electronic records allow data analysis for audits and research.
- **Ensuring legal compliance:** Time-stamped entries provide evidence for accountability and meet regulatory requirements.

**End of Questions  
Good Luck!**

جامعة: القاهرة

كلية: التمريض

قسم: تمريض صحة المجتمع والصحة النفسية وإدارة التمريض.

توصيف مقرر دراسي

1- بيانات المقرر		
الفرقة / المستوى : 3rd Level (2025- 2026)	اسم المقرر : Nursing Informatics	الرمز الكودي : NUR 303
1 Credit	عدد الوحدات الدراسية : نظري	التخصص: Community, mental, and administration health nursing
عملی	1 Credit	

The student will be able to integrate and apply information sciences and computer sciences with nursing sciences to support culturally safe, evidence-based practice and high quality of nursing care through developing successful knowledge, skills and attitudes for multiple information management, analytical programs and healthcare technologies.	2- هدف المقرر :
A-1) Identify types of computers, application, and systems currently used and evolving in health care. A-2) Describe the basic concepts data, information and Knowledge. A-3) Discuss application of nursing informatics. A-4) Identify components of decision support and shared clinical decision-making needed to apply evidence to practice. A-5) Determine adequate evaluation methods for information systems.	3- المستهدف من تدريس المقرر : أ- المعلومات والمفاهيم :
B-1) Relate types of computers, applications, and systems currently used and evolving in health care. B-2) Propose how information technology can positively impact individual and population health care outcomes. B-3) Differentiate among key elements of computer assisted instruction, E-learning, and informatics tools in the provision of education and support for nursing students and the general population. B-4) Relate the challenges process of information technology on health promotion of individuals, families and community.	ب- المهارات الذهنية :

<p>C-1) Select informatics topics relevant to evidence-based practice with varied populations.</p> <p>C-2) Implement computer systems for clinical practice, education, decision support, and shared clinical and educational decision-making.</p> <p>C-3) Appraises informatics terminology, data storage, and transmission.</p> <p>C-4) Utilize nursing informatics as a fundamental tool for the creation of evidence.</p> <p>C-5) Interpret the computer-aided instructions.</p> <p>C-6) Record clinical data using accepted standardized terminologies to represent nursing-related data.</p> <p>C-7) Evaluate cultural, ethical and legal implications of information technology in health care.</p>	<p>ج- المهارات المهنية الخاصة بالمقرر :</p>
<p>D-1) Find trusted sources for scientific materials via internet.</p> <p>D-2) Apply health educational programs on different groups and at different setting through the information technology.</p> <p>D-3) Use the electronic encounter documentation.</p> <p>D-4) Integrate strategies of distance health education into nursing practice.</p> <p>D-5) Function as a self- directed health education who assumes responsibilities of professional growth.</p>	<p>د- المهارات العامة :</p>
<p>E-1) Appreciate the importance of electronic recording in improving the quality of care and patient safety.</p> <p>E-2) Demonstrates beliefs in nursing informatics application in the nursing field.</p> <p>E-3) Shows the ability to develop computerized nursing</p>	<p>هـ- الاتجاهات :</p>
<p>1- Introduction to course objectives, outlines and teaching strategies</p> <p>2- Introduction to nursing informatics</p> <p>3- Computer system hardware and types of computer</p> <p>4- Computer software overview</p> <p>5- Social networking</p> <p>6- Telecommunications</p>	<p>4- محتوى المقرر :</p>

<p>7- Types of healthcare information technologies</p> <p>8- Mid-term exam</p> <p>9- Application of nursing informatics in clinical practice</p> <p>10-Application of nursing informatics in nursing administration 11- Application of nursing informatics in nursing research</p> <p>12-Application of nursing informatics in nursing education</p> <p>13-Nursing informatics competencies</p> <p>14-Legal and ethical issues in nursing informatics</p> <p>15-Revision</p>	
<p>- Online lecture (webinars)</p> <p>- Online discussions</p> <p>- Online presentation with integrated video links</p> <p>-Online practical tasks applications</p>	<p>5- اساليب التعليم والتعلم :</p>
<p>لا يوجد طلاب ذوى قدرات محدودة</p>	<p>6- اساليب التعليم والتعلم للطلاب ذوى القدرات المحدودة:</p>
	<p>7- تقويم الطلاب :</p>
<p>1. Online practical tasks assignments</p> <p>2. Midterm exam</p> <p>3. Final exam</p>	<p>أ- الاساليب المستخدمة</p>
<p>Assessment 1: Online practical tasks assignments started from... 4<sup>th</sup> Week</p> <p>Assessment 2: Midterm exam 8<sup>th</sup> Week</p> <p>Assessment 3: Final exam 16<sup>th</sup> Week</p>	<p>ب- التوقيت</p>
<p>- Online tasks applications 30 %</p> <p>- Midterm exam 20 %</p> <p>- Final- Term exam 50 %</p> <p>-Total 100 %</p>	<p>ج- توزيع الدرجات</p>
	<p>8- قائمة الكتب الدراسية والمراجع :</p>
<p>• Voice recorded handouts prepared by academic staff</p>	<p>أ- مذكرات</p>

<ul style="list-style-type: none"> <li>• Hannah, K.J., Hussey, P., Kennedy, M.A., Ball, M.J. (2018). Introduction to Nursing Informatics. 4th edition, springer.</li> <li>• Sipes, C. (2019). Application of Nursing Informatics: Competencies, Skills, Decision-Making. Springer.</li> <li>• American Nursing Association ANA (2019). Nursing Informatics: Scope and Standards of Practice, 2nd Ed.</li> <li>• Wacker G., G. (2020). Legal &amp; Ethical Issues in Nursing. 7th edition, Pearson.</li> </ul>	<p>ب- كتب ملزمه</p>
<ul style="list-style-type: none"> <li>• Er., Edward (2019). Computer Hardware and Software. Basics Kindle Edition.</li> <li>• Dodd, A. (2019). The Essential Guide to Telecommunications (Essential Guides (Prentice Hall)). 6th Edition, Pearson.</li> <li>• Knoke, D. (2020). Understanding Social Networks: Theories, Concepts, and Findings. American Sociology Association.</li> <li>• Tan, J. (2019). Healthcare Information Systems and Informatics: Research and Practices. 1<sup>st</sup> Edition, IGI Global.</li> <li>• Hassan, S. (2020). Computer Hardware &amp; Software. Kindle edition.</li> </ul>	<p>ج- كتب مقترحه</p>
<ul style="list-style-type: none"> <li>• <a href="https://freecomputerbooks.com/compsc HardwareBooks.html">https://freecomputerbooks.com/compsc HardwareBooks.html</a></li> <li>• <a href="http://nursing-informatics.com/">http://nursing-informatics.com/</a></li> <li>• <a href="https://www.himss.org/resources/online-journal-nursing-informatics">https://www.himss.org/resources/online-journal-nursing-informatics</a></li> <li>• <a href="http://www.google.com">http://www.google.com</a></li> <li>• <a href="http://www.yahoo.com">http://www.yahoo.com</a></li> <li>• <a href="http://www.facebook.com">http://www.facebook.com</a></li> <li>• <a href="https://web.whatsapp.com/">https://web.whatsapp.com/</a></li> <li>• <a href="https://www.linkedin.com/">https://www.linkedin.com/</a></li> <li>• Google play or apple store for installing nursing informatics apps</li> </ul>	<p>د- دوريات علمية أو نشرات .....</p>



## Exam Blueprint

**Course:** Informatics and Education Technology in Nursing.

**Code:** NUR 303

**Semester:** First semester first term

**Level:** 3<sup>rd</sup> Level

**Program:** Based on Competencies nursing program.

**Teaching staff:** Dr.Faten, Dr.Amany, Dr.Mariam, Dr.Aya , Dr.Marwa

**Date of exam:** 21/1/2026

Level of ILOS Course Content	Knowledge & understanding		Intellectual		Application		Analysis		Evaluation		1* Relative weight of topics
	3* Relative weight of cell	4* No. of quest	3* Relative weight of cell	4* No. of quest	3* Relative weight of cell	4* No. of quest	3* Relative weight of cell	4* No. of quest	3* Relative weight of cell	4* No. of quest	
1. Nursing Informatics: Introduction To Informatics, Definitions, Evolution, Principles, Expectations and Theories	1.07	0.5	0.99	0.49	2.8	1.4	0.7	0.35	0.8	0.4	6.5
2. Nursing Informatics: A Core Competencies For Nurses And Leaders 1	0.84	0.008	0.78	0.39	2.2	1.1	0.59	.2	0.63	0.31	7.1
3. Nursing Informatics: A Core Competencies For Nurses And Leaders 2	1.07	0.5	0.99	0.49	2.8	1.4	0.7	0.35	0.8	0.4	8.5
4. Nursing Informatics: Administrative Applications	1.7	0.8	1.66	0.83	4.7	2.3	1.26	0.63	1.3	0.65	10.9
5. Nursing Informatics: Research Applications	1.5	0.75	1.4	0.7	4	2	1.09	0.5	1.1	0.55	9.4
6. Nursing Informatics: Clinical Applications	1.07	0.5	0.99	0.49	2.8	1.4	0.7	0.35	0.8	0.4	9.5
7. Nursing Informatics—Complex Applications	2.2	1.1	2.11	1	6	3	1.6	0.8	1.7	0.85	13.8
8. Introduction to Educational Technology In Nursing	1.2	0.6	1.19	0.5	3.4	1.7	0.9	0.45	0.96	0.48	7.8
9. Educational Technology Applications	0.7	0.35	0.65	0.32	1.8	0.9	0.49	0.24	0.53	0.26	6.3
10. Educational Technology Applications: E-learning	0.7	0.35	0.65	0.32	1.8	0.9	0.49	0.24	0.53	0.26	6.3
11. Introduction to Consumer Health Informatics	1.7	0.8	1.66	0.83	47	2.3	1.26	0.63	1.3	0.65	10.9
<b>2* Relative weight of ILOs /level</b>	16.6		15.4		43.7		11.7		12.6		

رئيس قسم إدارة التمريض

أ.د.