

Test Content Outline
 Effective Date: December 12, 2022

Informatics Nursing
 Board Certification Examination

There are 150 questions on this examination. Of these, 125 are scored questions and 25 are pretest questions that are not scored. Pretest questions are included to determine how well these questions will perform before they are used on the scored portion of the examination. The pretest questions cannot be distinguished from those that will be scored, so it is important for a candidate to answer all questions. A candidate's score, however, is based solely on the 125 scored questions. Performance on pretest questions does not affect a candidate's score.

This Test Content Outline identifies the areas that are included on the examination. The percentage and number of questions in each of the major categories of the scored portion of the examination are also shown. *Note: The examples in parentheses are not all-inclusive and do not indicate importance.*

Category	Content Domain	Number of Questions	Percentage
I	Foundations of Practice	45	36%
II	System Design Lifecycle	44	35%
III	Data Management and Healthcare Technology	36	29%
TOTAL		150	100%

I Foundations of Practice

A. Professional Practice

Knowledge of:

1. Nursing informatics scope and standards of practice
2. General management fundamentals (e.g., leadership and management principles, strategic planning, mentoring, budgeting)
3. Policy promotion and public advocacy for health equity (e.g., promoting community-level health equity awareness, social determinants of health [SDOH], population [e.g., geographical] health and risk stratification)

Skills in:

4. Applying evidence-based practice of informatics solutions (e.g., literature reviews and evaluations, clinical practice guidelines, clinical protocols, emerging trends)
5. Self-development strategies for informatics nurses (e.g., performance goal setting, continuing education, competency development, evaluation methodologies, informatics professional organizations, promoting informatics)

B. Methodologies and Theories

Knowledge of:

1. Foundations of nursing informatics (e.g., computer science, information science, nursing science)
2. Concepts or theories that support practice (e.g., Data Information Knowledge Wisdom [DIKW], organizational behavior, communication systems, safety cultures and processes, systems theory, information processing systems)

Skills in:

3. Applying common change management and process improvement techniques (e.g., Institute for Healthcare Improvement [IHI], Agile, total quality management [TQM], process excellence, systems thinking, high reliability organizations)

C. Rules, Regulations, and Requirements

Knowledge of:

1. Regulatory, reimbursement, and accreditation requirements (e.g., clinical processes involving revenue cycles, The Joint Commission, Centers for Medicare & Medicaid Services [CMS], Health Information Technology for Economic and Clinical Health [HITECH] Act)
2. Legal issues (e.g., malpractice, scope of practice, proprietary data misuse, copyright permissions)
3. Security, privacy, and confidentiality regulations, laws, and principles (e.g., Health Insurance Portability and Accountability Act [HIPAA], security threat assessment and mitigation, Coronavirus Aid, Relief, and Economic Security [CARES] Act, 21st Century Cures Act)

Skills in:

4. Applying ethical practices related to data informatics solutions
5. Crafting and reviewing policies and procedures for relevance to professional practice regulations

D. Interprofessional Collaboration

Knowledge of:

1. Communication strategies and techniques (e.g., change communication, systems-based communication, communication timing) inside and outside of the organization

Skills in:

2. Selecting appropriate modes of communication for the situation (e.g., face-to-face, written, verbal, electronic, body language)
3. Applying team building principles and skills (e.g., promoting accountability, assigning roles, coordinating workgroups and interprofessional teams, managing and resolving conflict)

II System Design Lifecycle

A. Planning and Analysis

Knowledge of:

1. System planning, including needs assessments (e.g., building user stories and defining requirements), system-wide impact analysis, gap analysis, feasibility studies, vendor analysis, process mapping (e.g., current versus future state comparisons)
2. Project management fundamentals

Skills in:

3. Analyzing interactions between clinical workflows and clinical systems (i.e., interaction of people, processes, and technology)
4. Utilizing various data/process diagramming techniques (e.g., decision trees, swimlane diagrams, flowcharts, database diagrams)

B. Designing and Building

Knowledge of:

1. Clinical content building techniques (e.g., dashboards, templates, flowcharts)

Skills in:

2. Providing report criteria for collection of data and information
3. Designing systems to support workflows (e.g., incorporating evidence-based care into clinical decision support [CDS] logic, using prototypes, developing workflow maps)

C. Testing, Training, and Implementation

Knowledge of:

1. System implementation techniques and concerns (e.g., conversion, migration from legacy systems, upgrades, optimizations, backout plans)
2. Testing fundamentals (e.g., functional testing [unit, integration, regression], non-functional testing [user acceptance], test script development, creating and evaluating test scenarios)
3. Training fundamentals (e.g., training needs analysis, adult learning methodologies, training modalities, evaluation techniques)

Skills in:

4. Planning education and training (e.g., setting objectives, designing materials)

D. Monitoring, Maintaining, Supporting, and Evaluating

Knowledge of:

1. Technical maintenance (e.g., hardware, backup procedures) and system maintenance (e.g., maintaining test, training, and production environments)
2. System documentation procedures and software version control systems

Skills in:

3. Evaluating user experience, adoption, and satisfaction (e.g., usability heuristics, ergonomics)
4. Supporting end-users and leadership (e.g., optimization, user manuals, help desk tickets, basic change governance processes and procedures)
5. Managing downtime for routine/scheduled upgrades, maintenance, and disaster and emergency (i.e., unplanned incidents/events) recovery
6. Monitoring system performance

III Data Management and Healthcare Technology

A. Data Standards

Knowledge of:

1. Metadata and semantic representation
2. Standardized nomenclatures (e.g., data element sets such as Nursing Minimum Data Set [NMDS], nurse-developed terminologies such as the Clinical Care Classification [CCC] system and Perioperative Nursing Data Set [PNDS], multidisciplinary terminologies such as Logical Observation Identifiers Names and Codes [LOINC] and Systematized Nomenclature of Medicine [SNOMED])
3. Concepts related to technical standards (e.g., Health Level Seven [HL7], Fast Healthcare Interoperability Resources [FHIR], Digital Imaging and Communications in Medicine [DICOM])

B. Data Management

Knowledge of:

1. Database types, data integration, and data warehousing (e.g., Big Data)
2. Data archiving concepts and principles
3. Patient-generated data (e.g., patient portal, mobile health)

Skills in:

4. Data migration, data backloading, and monitoring data integrity

C. Data Analysis, Application, and Transformation

Knowledge of:

1. Metastructures such as data, information, knowledge, and wisdom (including evidence-based practice)
2. Database querying, reporting (e.g., Structured Query Language [SQL]), and data manipulation

Skills in:

3. Applying analytics tools and techniques to support operational decision making, patient safety, quality, and risk-management-related activities (e.g., root cause analysis, failure mode effect analysis [FMEA])
4. Using data visualization/representation techniques (e.g., graphs, charts, images, reports, dashboards)

D. Hardware, Software, and Peripherals

Knowledge of:

1. Hardware device strategy, including selection of device types that are appropriate to different clinical scenarios
2. Healthcare technology trends (e.g., mobile device strategies, wearable devices, telehealth, Internet of Things [IoT], home medical devices, predictive analytics, real-time locating system [RTLS], natural language processing [NLP])

Skills in:

3. Clinical device and equipment management (e.g., electronic beds, smart pumps, physiological monitoring devices, barcode scanners, automatic dispensing cabinets, biometrics, integration technology)
4. Using communication technologies (e.g., smart devices, networks, secure messaging/encryption, wireless connectivity, Radio Frequency Identification [RFID], mobile printers such as those supporting home care services)
5. Troubleshooting hardware- and software-related issues for patients and clinical end-users (e.g., single sign-on [SSO])
6. Evaluating and recommending hardware and software solutions, enhancements, and optimizations to support the nursing process
7. Applying technology to clinical simulation scenarios (e.g., workflows, education, professional development)