Sample Outline for Prelicensure Course in Nursing Informatics

Overall Course Objectives

✔ Demonstrate basic understanding and use of Computer Technologies and skills that support nursing knowledge work, health care delivery, and the advancement of nursing knowledge, learning, and service.
✔ Appreciate and value nursing knowledge work, informatics literacy, and the role of emerging technologies in the advancement of nursing science and the delivery of high quality safe nursing care within the context of a learning health care system.
✔ Explain the nurses’ role in supporting and engaging people in the adoption, use, and meaningful evaluation of technologies and resources that promote health and prevent disease.
✔ Describe and explain the evolution and development of nursing informatics to support care delivery across health care contexts.
✔ Understand the use of CIS (clinical information systems) and the EHR (electronic health care records) to support decisions and document nursing value in service of health care’s triple aim: improved patient experience, improved health of populations, and health care cost reduction.
✔ Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
✔ Apply safeguards and decision making support tools embedded in patient care technologies and information systems to support a safe practice environment for both patients and healthcare workers.
✔ Discuss the influence of policy and ethics, in regard to patient engagement, clinical decision support and the delivery of safe, high quality care.
✔ Discuss future trends and issues related to nursing informatics that support and influence the science of nursing informatics and the advancement of practice, education and research.

Passport Module - Digital Literacy: Mastering the Fundamentals of Computers and Technologies

Demonstrate basic understanding and use of Computer Technologies and skills that support nursing knowledge work, health care delivery, and the advancement of nursing knowledge, learning, and service.

• Demonstrate knowledge about basic computer operation.
• Differentiate between different computer hardware parts.
• Identify a variety of software applications used for productivity and patient care applicability.
• List names of major operating systems.
  o Basic Computer Competencies.
  o Hardware
  o Software
  o Networks
  o Information and communication technology
  o Operating systems
  o File Management
  o Utilities
  o Print Management
  o Using the Application
  o The Intranet
  o Using the browser
  o Using the Web
  o Web outputs
  o e-mail management
Module 1 - Introduction and Overview: Knowledge Complexity, Informatics Literacy and Nursing Knowledge Work

Appreciate and value nursing knowledge work, informatics literacy, and the role of emerging technologies in the advancement of nursing science and the delivery of high quality safe nursing care within the context of a learning health care system.

- Develop a systems thinking and quality improvement mindset that values innovation and the use of evidence in service of care.
- Explore definitions of knowledge, knowledge management, and knowledge complexity.
- Develop an understanding about the relationships between and among data, information, knowledge, learning, performance and meaning, philosophy, and wisdom derived from nursing informatics knowledge work.
- Appreciate the history, evolution and development of the science of informatics and nursing informatics as a means to support high quality, safe, efficient and effective health care.

Module 2 – Welcome to the World of Nursing Informatics

Explain the nurses’ role in supporting and engaging people in the adoption, use, and meaningful evaluation of technologies and resources that promote health and prevent disease.

Describe and explain the evolution and development of nursing informatics to support care delivery across health care contexts.

- Recognize the history of the evolution of nursing informatics.
- Identify major theories of nursing informatics.
- Identify key health informatics literacy terms and components.
- Explore current definitions, theories, and concepts in nursing informatics.
- Evaluate information from a web resource for professional education on a health topic.

Module 3 - Making Nursing Knowledge Visible Through Clinical Information Systems

Understand the use of CIS (clinical information systems) and the EHR (electronic health care records) to support decisions and document nursing value in service of health care’s triple aim: improved patient experience, improved health of populations, and health care cost reduction.

- Recognize the time, effort, and skill required for computers, databases and other technologies to become reliable and effective tools for patient care.
- Identify essential information that must be available in a common database to support patient care.
- Use standardized terminology in a care environment that reflects nursing’s unique contribution to patient outcomes.
- Value nurses’ involvement in design, selection, implementation, and evaluation of information technologies to support patient care.
  - Systems thinking
  - Workflow and Care Processes
  - SDLC – Systems Design Life Cycle
  - Human computer interaction
Integrating AACN Essentials, QSEN KSA’s and TIGER Competencies for Nursing Informatics
Thomas R. Clancy, PhD, MBA, RN, FAAN

- Value technologies that support clinical decision-making, error prevention, and care coordination.
  - Applications to manage care
  - Provider order entry
  - Clinical documentation (assessment, care planning, other)
  - Results reporting
  - Bar coded medication administration (BCMA)
  - Electronic medication administration record (eMar)
  - Ancillary systems (pharmacy, lab, radiology)

Module 4 - Using Technological Knowledge to Enhance Quality and Safety Across Care Settings

Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice in service of health care triple aim goals.

- Explain why information and technology skills are essential for safe patient care.
- Recognize the role of information technology in improving patient care outcomes and creating a safe care environment.
- Recognize that redesign of workflow and care processes should precede implementation of care technology to facilitate nursing practice.
- Navigate the electronic health record.
  - Information and Knowledge Management Competencies
    - Demographic
    - Consents
    - Med Management
    - Planning care
  - Order results
  - Notifications
  - Care documentation

- Apply patient-care technologies as appropriate to address the needs of a diverse patient population.
  - Patient Care Technologies
  - Personal health records
  - Health Literacy
  - Social Networks
  - Computers, printers
  - IV smart pumps,
  - Bar coded medication management systems,
  - Pulse oximeters,
  - Automated blood pressure and pulse
  - Monitoring equipment (ECG, arterial blood pressure, respirations)
  - Automated temperature
  - Defibrillators

- Apply technology and information management tools to support person centered care and safe processes of care.
  - Safeguards and decision making support (Information Systems)
  - Medication dosing support (medication pick lists, dosing calculators)
  - Order facilitators (order sets for specific conditions based on evidence based guidelines: pneumonia, adult prosthetic hip replacement, myocardial infraction)
• Point of care alerts (drug to drug interactions, duplicate therapy, drug allergies, contraindications to specific conditions)
○ Point of care reminders (immunizations, cancer screenings, fall prevention, pain management).
○ Information displays (dashboards of relevant data)
• Use telecommunication technologies to assist in effective communication in a variety of healthcare settings.
  ○ Communication Devices
  ○ Smart phones, hands free mobile communication devices (Vocera), tablets (iPads)
  ○ Telecommunications technologies:
    ○ Email,
    ○ Telehealth
  ○ Patient monitoring technologies (virtual assessments, ICU’s)
  ○ Home sensing devices (weight scale, BP monitor, bed chair, glucose meter, implant monitors, baby monitors, spirometer, medication monitoring, pedometer)
• Contrast benefits and limitations of different communication technologies and their impact on safety and quality
• Respond appropriately to clinical decision-making supports and alerts.

Module 5 – Policy and Ethics for Guiding Informatics Literacy and Nursing Care

Apply safeguards and decision making support tools embedded in patient care technologies and information systems to support a safe practice environment for both patients and healthcare workers.

Discuss the influence of policy and ethics, in regard to patient engagement, clinical decision support and the delivery of safe, high quality care.
• Describe examples of how technology and information management are related to decision support and the quality and safety of patient care
• Protect confidentiality of protected health information in electronic health records
• Participate in evaluation of information systems in practice settings through policy and procedure development.
  ○ Data Security, regulatory, confidentiality, right to privacy.
  ○ HIPAA
  ○ Copyright laws
  ○ Ethical behavior

Module 6 - Future Trends and Issues in Nursing Knowledge Work and Informatics Literacy

Discuss future trends and issues related to nursing knowledge work and informatics literacy to support the advancement of practice, education and research.
• Advocate for the use of new patient care technologies for safe, quality care
• Appreciate the core competencies for interprofessional collaborative practice and education to support safe, effective, high quality care delivery.
  ○ Big data and Nursing Science
Module 7 - Faculty Teaching and Learning Resources

- Passport Module – Digital Literacy: Mastering the Fundamentals of Computers and Technologies
- Module 1 – Introduction and Overview: Knowledge Complexity, Informatics Literacy and Nursing Knowledge Work
- Module 2 – Welcome to the World of Nursing Informatics
- Module 3 – Making Nursing Knowledge Visible Through Clinical Information Systems
- Module 4 – Using Technological Knowledge to Enhance Quality and Safety Across Care Settings
- Module 5 – Policy and Ethics for Guiding Informatics Literacy and Nursing Care
- Module 6 – Future Trends and Issues in Nursing Knowledge Work and Informatics Literacy
- Module 7 – Faculty Teaching and Learning Resources