

April 1, 2026

Elena Quiroz-Livanis, Interim Secretary of Higher Education
Maryland Higher Education Commission (MHEC)
217 East Redwood Street
Baltimore, MD 21202

Dear Secretary:

University of Maryland seeks approval to substantially modify the approved and existing **Post-Baccalaureate Certificate Program, Nursing Informatics (PBC-NI)** (HEGIS 1203.05; CIP 51.3801).

In 2023, UMSON secured approval from the Maryland Higher Education Commission (MHEC) to convert its Nursing Informatics area of concentration within the Master of Science in Nursing (MSN-NI) to a competency-based curriculum (HEGIS 1203.00; CIP 51.3808). Building on this advancement, the current proposal introduces a substantial revision to the online Nursing Informatics Post-Baccalaureate Certificate (NI-PBC) program (HEGIS 1203.05; CIP 51.3801), with its curriculum fully aligned and integrated with the updated MSN-NI framework. Key revisions include the transition to competency-based education, a reduction in total credits from 19 to 12, and an increase in practicum hours from 135 to 225. The revised certificate also reflects the American Association of Colleges of Nursing's (AACN) *Essentials: Core Competencies for Professional Nursing Education*, ensuring full alignment with current expectations across accreditation standards, workforce needs, and national certification bodies.

Graduates of the revised PBC-NI program will be equipped with a distinctive blend of clinical insight and informatics expertise, enabling them to bridge interdisciplinary teams and contribute meaningfully to health information technology (IT) initiatives. Upon program completion, graduates are eligible to pursue national certification through the American Nurses Credentialing Center (ANCC), further supporting workforce readiness and professional advancement.

As shown in this proposal, UMSON has the resources to appropriately fund, teach, and support this modification. Thank you for your time and consideration of this request. Please contact Meghan Bruce Bojo at 410-706-2055 or mbojo@umaryland.edu if you have any questions.

Sincerely,



Dr. Roger J. Ward, EdD, JD, MSL, MPA
Provost and Executive Vice President
University of Maryland, Baltimore



**Cover Sheet for In-State Institutions
New Program or Substantial Modification to Existing Program**

Institution Submitting Proposal	
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Each action below requires a separate proposal and cover sheet.

- | | |
|---|---|
| <input type="radio"/> New Academic Program | <input type="radio"/> Substantial Change to a Degree Program |
| <input type="radio"/> New Area of Concentration | <input type="radio"/> Substantial Change to an Area of Concentration |
| <input type="radio"/> New Degree Level Approval | <input type="radio"/> Substantial Change to a Certificate Program |
| <input type="radio"/> New Stand-Alone Certificate | <input type="radio"/> Cooperative Degree Program |
| <input type="radio"/> Off Campus Program | <input type="radio"/> Offer Program at Regional Higher Education Center |

Payment <input type="radio"/> Yes	Payment <input type="radio"/> R*STARS #	Payment	Date
Submitted: <input type="radio"/> No	Type: <input type="radio"/> Check #	Amount:	Submitted:

JE31413

Department Proposing Program			
Degree Level and Degree Type			
Title of Proposed Program			
Total Number of Credits			
Suggested Codes	HEGIS:	CIP:	
Program Modality	<input type="radio"/> On-campus <input type="radio"/> Distance Education (fully online) <input type="radio"/> Both		
Program Resources	<input type="radio"/> Using Existing Resources <input type="radio"/> Requiring New Resources		
Projected Implementation Date <small>(must be 60 days from proposal submission as per COMAR 13B.02.03.03)</small>	<input type="radio"/> Fall <input type="radio"/> Spring <input type="radio"/> Summer Year:		
Provide Link to Most Recent Academic Catalog	URL:		

Preferred Contact for this Proposal	Name:
	Title:
	Phone:
	Email:

President/Chief Executive	Type Name:
	Signature: Date: 4/1/2026

	Date of Approval/Endorsement by Governing Board:
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UNIVERSITY *of* MARYLAND
SCHOOL OF NURSING

**Proposal for Substantial Modification to the Existing
Post-Baccalaureate Certificate Program:**

Nursing Informatics
HEGIS 1203.05; CIP 51.3801

To the
Maryland Higher Education Commission

R-Star Confirmation: JE314136 (February 4, 2026; Entry ID: 19096)

University of Maryland School of Nursing
At the University of Maryland Baltimore

A proposal for a substantial modification to the existing Post-Baccalaureate Certificate Program, Nursing Informatics, at the University of Maryland, Baltimore School of Nursing:

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A. Centrality to Institutional Mission and Planning Priorities

1. Provide a description of the program, including each area of concentration (if applicable), and how it relates to the institution's approved mission.

In 2023, UMSON secured approval from the Maryland Higher Education Commission (MHEC) to convert its Nursing Informatics area of concentration within the Master of Science in Nursing (MSN-NI) to a competency-based curriculum (HEGIS 1203.00; CIP 51.3808). Building on this advancement, the current proposal introduces a substantial revision to the online Nursing Informatics Post-Baccalaureate Certificate (NI-PBC) program (HEGIS 1203.05; CIP 51.3801), with its curriculum fully aligned and integrated with the updated MSN-NI framework. Key revisions include the transition to competency-based education, a reduction in total credits from 19 to 12, and an increase in practicum hours from 135 to 225. These changes strengthen alignment with accreditation, certification, and regulatory expectations and better position NI-PBC graduates for success on the American Nurses Credentialing Center (ANCC) Informatics Nursing Certification exam.

In April 2021¹, the American Association of Colleges of Nursing (AACN) published *The Essentials: Core Competencies for Professional Nursing Education (Essentials)* which calls for a transition to competency-based education focusing on two levels of professional nursing education: entry-level and advanced-level nursing practice. The principles of competency-based education present a new model and framework for preparing registered nurses for contemporary practice. These *Essentials* introduce 10 domains and the expected competencies (and sub-competencies) for each domain that represent professional nursing practice and reflect the diversity of practice settings. The competencies are applicable across four spheres of care defined by AACN (disease prevention/promotion of health and wellbeing, chronic disease care, regenerative or restorative care, and hospice/palliative/supportive care), across the lifespan, and with diverse patient populations.

As the leader in nursing education, the University of Maryland School of Nursing (UMSON) continues to be at the forefront nationally in re-envisioning nursing curricula to align with the 2021 AACN *Essentials*.

The revised NI-PBC competency-based curriculum is designed to prepare graduates who are "practice-ready" and capable of making an immediate, meaningful impact across diverse healthcare environments. The redeveloped curriculum is scheduled to launch in fall 2026 with a gradual phase-out of the remaining terms of the existing program. To support this transition, admission to the current NI-PBC program of study was paused as of Spring 2025. Please refer to Appendix A for a curriculum comparison.

2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.

Adopting the competency-based curriculum is consistent with UMSON's mission to prepare leaders and to address local, national, and global health priorities. The University of Maryland, Baltimore (UMB) is the state's leading public health, law, and human services university and devoted to excellence in professional and graduate education, research, patient care, and public service. We emphasize interdisciplinary education and research in an atmosphere that incorporates the following core values: respect and integrity, equity and justice, well-being and sustainability, and innovation and discovery. By conducting internationally recognized research to cure diseases and to improve the health, social functioning, and just treatment of the people we serve, we foster economic development in the city, state, and nation. We are committed to ensuring that the knowledge we generate provides maximum benefit to society and directly enhances Maryland communities.

¹ AACN Essentials: <https://www.aacnnursing.org/Portals/42/AcademicNursing/pdf/Essentials-Executive-Summary.pdf>

Ranked in the top 10 nationwide by U.S. News & World Report² and at one of the country's largest schools of nursing, our NI program is a rigorous and nationally respected program that transforms students into top-tier nurses. Upon completion, graduates are prepared with skills to gather data from information to drive decision making and support professionals as they expand knowledge for practice. This timely revision builds upon the new National Academy of Medicine's Future of Nursing report, which outlines urgent changes in nursing education³; new technologies in teaching and learning such as simulated clinical experiences; increased content in public health and emergency management post-Covid; increased awareness for electronic, mobile, and telehealth systems; and a new emphasis on social determinants of health and an understanding of the broadened student demographics with a variety of learning styles.

The mission of the UMSON is to shape the profession of nursing and the health care environment by developing nursing leaders in education, research, and practice. Through comprehensive academic preparation, immersive experiences, and dedicated faculty mentorship, the reconceptualized PBC-NI program cultivates highly practice-ready graduates, underscoring the program's transformative impact and its elevated standards of excellence. The revised NI-PBC curriculum will have an increased focus on leadership, practical knowledge, skills and abilities to meet the informatics competencies. This proposal to substantially modify the NI-PBC curriculum by adopting the AACN's *Essentials* is consistent with the school's mission and will assist the school in meeting objectives in the strategic plan.

3. Provide a brief narrative of how the proposed program will be adequately funded for at least the first five years of program implementation.

UMSON received initial approval in 2013 to offer the Nursing Informatics Post-Baccalaureate Certificate (NI-PBC) program (HEGIS 1203.05; CIP 51.3801), followed by approval in 2017 to deliver the program in a distance education format. The NI-PBC coursework is fully integrated into the existing MSN-NI curriculum, ensuring academic cohesion while maximizing resource efficiency.

The state appropriation budget supports the specialty and remains accounted for. As described in Appendices B and C, financial projections include an expenditure increase of 2% for estimated COLA/merit increases and 3% related to other costs. Over the past decade, the NI-PBC enrolls 4-5 annually, and we build in a 2% resource increase consistent with the estimated program expenditures.

4. Provide a description of the institution's a commitment to: a) ongoing administrative, financial, and technical support of the proposed program; b) continuation of the program for a period of time sufficient to allow enrolled students to complete the program.

The NI-PBC program has been offered since 2013, beginning with an inaugural cohort of two students. Its post-graduate certificate coursework is fully integrated into the MSN-NI curriculum, providing continuity in faculty involvement and resource allocation. Through ongoing curriculum refinement, the program remains responsive to state workforce demands. Its continued operation for over a decade reflects both academic rigor and high levels of graduate satisfaction. UMSON and its faculty are fully committed to student success and program completion, including maintaining the NI-PBC program for a sufficient period to support all currently enrolled students through graduation.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan:

² U.S News & World Report: <https://www.usnews.com/best-graduate-schools/top-nursing-schools/university-of-maryland-baltimore-33121>

³ National Academy of Medicine's Future of Nursing report: <https://nam.edu/publications/the-future-of-nursing-2020-2030/>

1. Demonstrate demand and need for the program in terms of meeting present and future needs of the region and the State in general

The reimagined NI-PBC curriculum, rooted in the new AACN Essentials, directly responds to 2022 State of Maryland's Healthcare Workforce Report⁴ which highlights the region's critical provider shortages and the increasing complexity of care delivery models.

The *Essentials'* 10 domains ten domains emphasize interprofessional collaboration, leadership, and data-informed decision-making, all competencies flagged by employers, state policymakers, and certification bodies as urgent priorities. These domains provide a shared language and measurable benchmarks that enhance alignment with state boards of nursing and reinforce workforce readiness for Maryland's hospitals, clinics, and community health systems. Feedback from stakeholders, including students, faculty, employers, alumni, and our advisory board consistently emphasized a decrease in the number of credits, more emphasis on the NI role, artificial intelligence and big data will better align with the nursing leadership and management core content specific to evidence-based practice, biostatistics, and professional writing. Moreover, the online NI-PBC responds to the Maryland General Assembly's SB440/CH0708 (2022) Commission to Study the Health Care Workforce Crisis report⁵ in the following ways:

- *Workforce Development.* Nursing Informatics programs bridge gaps in healthcare technology, ensuring that nurses are equipped with the skills needed to support electronic health records (EHRs), telehealth, and data-driven decision-making.
- *Expanding Distance Education.* The 2017 approval for the distant education format of the online NI-PBC program supports accessible education pathways.
- *Technological Advancements.* UMSON's Summer Institute in Nursing Informatics (SINI)⁶ provide opportunities for professionals to engage with industry leaders and explore innovations in healthcare informatics.

2. Provide evidence that the perceived need is consistent with the Maryland State Plan for Postsecondary Education.

UMSON has systems in place to address the Maryland State Plan for Postsecondary education's goals of "equitable access, student success, and innovation"⁷. To demonstrate support of the goals outlined by the Maryland State Plan for Postsecondary Education, we list aligned priorities below in the UMSON's goals and practice^{7,8}:

Priority 2. UMSON's website draws attention to financial aid and scholarships in several places to include the admission's landing page⁹ and student life page. The Workforce Shortage Student Grant Program provides financial assistance to aspiring nursing students¹⁰ in addition to the

⁴ 2022 State of MD Healthcare Workforce Report: <https://mhaonline.org/wp-content/uploads/2023/02/2022-State-of-Maryland-s-Health-Care-Workforce-Report.pdf>

⁵ MD Commission to Study the Health Care Workforce Crisis (2022):

[https://health.maryland.gov/docs/SB%20440%20Ch.%20708%20\(2022\)%20E2%80%93%202023%20Final%20Report%20E2%80%93%20Commission%20to%20Study%20the%20Heal.pdf](https://health.maryland.gov/docs/SB%20440%20Ch.%20708%20(2022)%20E2%80%93%202023%20Final%20Report%20E2%80%93%20Commission%20to%20Study%20the%20Heal.pdf)

⁶ UMSON SINI: <https://www.nursing.umaryland.edu/academics/pe/events/sini/>

⁷ 2022 State Plan for Postsecondary Education: [https://dlslibrary.state.md.us/publications/Exec/MHEC/ED11-105\(b\)\(3\)\(i\)_2022.pdf](https://dlslibrary.state.md.us/publications/Exec/MHEC/ED11-105(b)(3)(i)_2022.pdf)

⁸ 2017-2021 MD State Plan for Postsecondary Education: [https://dlslibrary.state.md.us/publications/Exec/MHEC/ED11-105\(b\)\(3\)\(i\)_2017.pdf](https://dlslibrary.state.md.us/publications/Exec/MHEC/ED11-105(b)(3)(i)_2017.pdf)

⁹ UMSON Admissions: <https://www.nursing.umaryland.edu/admissions/>

¹⁰ Workforce Shortage Student Assistant Grant Program:

https://mhec.maryland.gov/preparing/pages/financialaid/programdescriptions/prog_wssag.aspx

Graduate and Professional Scholarship program¹¹, employer tuition remission programs, and scholarship opportunities¹² support access to affordable postsecondary education. In addition, UMB's Division of Student Affairs¹³ (UMB Student Affairs) coordinates University-wide initiatives, programs, and services that foster all students' academic, personal, and professional development.

Priority 3. UMSON Admissions counselors and student ambassadors meet with prospective students across Maryland to answer questions¹⁴. One-on-one admission counseling sessions are offered daily from 10:00am to 2:00pm¹⁵.

Priority 4. Systems to analyze and improve student's academic readiness and access to quality education are outlined in UMSON's 2024 accreditation report¹⁶. Biannually in the spring, a comprehensive survey of academic support services is distributed to all UMSON students and reviewed for areas of student need or suggested improvements in related services. In addition, nursing student organizations meet with UMSON leadership to review processes, policies, and areas of common emphasis and student concern.

To respond to the responsibilities of military personnel, non-traditional students, and lifelong learners, UMSON offers several resources to include flexible plans of study, and course work only options. Additionally, the Office of Professional Education, and Academic-Hospital Partnerships allow students to pursue academic endeavors that align with personal needs.^{17, 18, 19, 20}

Priority 6. The UMSON Student Life webpage²¹ provides easy access to resources, tools, schedules and events. The UMB Office of Educational Support and Disability Services²² provides academic and non-academic support services for students with disabilities through an interactive process and the UMB Writing Center²³ provides students with free writing assistance, via in-person and online, that ranges from planning a paper to polishing a dissertation.

Priority 7. UMSON offers several support systems to promote degree completion. Clinical partnerships with major healthcare institutions across the state improve student success as they graduate and begin a professional career. As an example, UMSON has worked with the University of Maryland Medical System, Johns Hopkins Medicine, MedStar, and other renowned facilities in Maryland to provide innovative practicum experiences to facilitate student learning and support the workforce. These arrangements provide expert instruction for the students, career mentoring and job offers to students in some cases before graduation.

¹¹ Graduate and Professional Scholarship Program:

https://mhcc.maryland.gov/preparing/Pages/FinancialAid/ProgramDescriptions/prog_gradprof.aspx

¹² UMSON Admissions: <https://www.nursing.umaryland.edu/admissions/>

¹³ UMB Student Affairs: <https://www.umaryland.edu/umb-student-affairs/>

¹⁴ UMSON on the Road: <https://www.nursing.umaryland.edu/admissions/visit-us/umson-on-the-road/>

¹⁵ UMSON Admission Counseling: <https://www.nursing.umaryland.edu/admissions/contact/#counseling>

¹⁶ UMSON CCNE Self-Study Reports: <https://www.nursing.umaryland.edu/about/accreditation/>

¹⁷ UMSON Military and Veteran Services: <https://www.nursing.umaryland.edu/admissions/military-veteran-nursing-education/>

¹⁸ UMSON Course Work Only: <https://www.nursing.umaryland.edu/academics/coursework-only/>

¹⁹ UMSON Office of Professional Education: <https://www.nursing.umaryland.edu/academics/pe/>

²⁰ UMSON Academic-Hospital Partnerships: <https://www.nursing.umaryland.edu/academics/academic-partnerships/academic-hospital-partnerships/>

²¹ UMSON Student Life: <https://www.nursing.umaryland.edu/student-life/>

²² UMB Office of Educational Support and Disability Services: <https://www.umaryland.edu/disabilityservices/>

²³ UMB Writing Center: <https://www.umaryland.edu/writing/>

Priority 8. UMSON's Information and Learning Technology (ILT)²⁴ team assists students with media applications for research, in the classroom, and with presentations for conferences, providing audiovisual technical support, audiovisual equipment maintenance, and teleconference operation and management. ILT offers many services online and in person to support research and distributed learning, including web servers and a Blackboard courseware server. Because many administrative, instructional, academic, and research materials are delivered electronically rather than in person, and clinical sites are selected for logistical appropriateness, online students have similar access to academic support services as students attending our brick-and-mortar locations. Students have access to view their grades and information about their registration, account, and financial aid online through the Student User Friendly System (SURFS). The Center for Information Technology Services (CITS)²⁵, the central information technology organization for the University, provides support for student-related systems.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State:

1. Describe potential industry or industries, employment opportunities, and expected level of entry (ex: mid-level management) for graduates of the proposed program.

In alignment with the 2021 AACN *Essentials*, health systems are increasingly encouraging their workforce to pursue further education to close skill gaps and meet quality and accreditation standards, including Magnet designation. The NI-PBC program is uniquely positioned to meet this workforce-driven demand by providing a targeted, competency-based pathway that complements the broader MSN-NI infrastructure and prepares nurse informaticians for practice in diverse healthcare environments. Graduates of the NI-PBC program are equipped with a distinctive blend of clinical and informatics expertise, enabling them to connect interdisciplinary healthcare teams and serve as key contributors and leaders on health information technology (IT) initiatives. They are employed across a wide range of settings and sectors, including hospitals, community clinics, public health agencies, rehabilitation centers, IT vendors, consulting firms, healthcare analytics organizations, research institutions, and federal agencies such as the Centers for Medicare & Medicaid Services and the Department of Defense. Many also hold academic appointments in universities²⁶.

2. Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.

According to a recent Healthcare Information and Management Systems Society (HIMSS) Workforce Survey (2022), 62% of respondents work in a hospital or multi-facility, the ambulatory and long-term care settings have seen a slight increase in areas for employment. Job titles include nursing informatics specialist, clinical informatics specialist, clinical analyst, director of clinical informatics, manager of clinical informatics, nurse educator, consultant, or chief nursing informatics officer²⁷. According to the US Bureau of Labor Statistics, the employment of health information technicians is projected to grow 7% percent from 2023 to 2033, much faster than the average for all occupations²⁸. Additionally, the NI-PBC responds to following Maryland Occupational Projections, as of 2025:

²⁴ UMSON Student Technology: <https://www.nursing.umaryland.edu/technology/students/>

²⁵ UMB Center for Information Technology Services: <https://www.umaryland.edu/cits/>

²⁶ Nelson & Parker (2019). Nursing Informatics: The EHR and beyond. <https://www.myamericannurse.com/nursing-informatics-ehr-beyond/>

²⁷ HIMSS: <https://www.himss.org/sites/hde/files/media/file/2023/04/26/ni-workforce-survey.pdf>

²⁸ BLS: <https://www.bls.gov/ooh/healthcare/medical-records-and-health-information-technicians.htm#tab-6>

Projections by Occupational Groups ²⁹ :	Annual Openings	Base Employment	Projected Employment	Total Openings
Healthcare Practitioners	12,626	2,490	2,564	378
Computer and Information Systems	4,268	13,671	14,375	2,494
Registered Nurses		48,808	52,368	30,761
Health Information Technologist		1,120	1,187	206
Health Technologist and Technicians		3,196	3,295	529

Industry Projections ³⁰ :	Base Employment	Projection Employment
Healthcare and social assistance	381,561	422,363
Computing Infrastructure	4,851	5,606

3. Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.

Advancements in healthcare technology, including the rise of data-driven decision-making, secure health information management, and artificial intelligence (AI), are rapidly increasing the demand for nursing informatics expertise. The 2023 HIMSS survey found that more than one-third of respondents reported growth in NI positions, signaling a national trend toward integrating informatics roles across health systems²³. Informatics nurses are essential in bridging clinical practice and technology, optimizing health information systems, ensuring data integrity, and educating healthcare teams. Nurses with informatics-related certifications also command higher salaries, underscoring the value of specialized education in this evolving field²³.

However, workforce development is challenged by rising occupational separations and limited educational capacity. Only 15% of nurse informaticists currently have over 20 years of clinical experience, a significant drop from 28% in 2014, highlighting a looming expertise gap²³. At the same time, the 2022–2023 American Association of Colleges of Nursing (AACN) enrollment report revealed that 65,766 qualified applicants were turned away from U.S. nursing schools due to insufficient program capacity³¹. This included over 55,000 for entry-level baccalaureate programs and nearly 10,000 across graduate-level offerings. This education bottleneck hampers the ability to prepare future nurse informaticians at a time when demand is intensifying.

Further illustrating workforce needs, a 2025 search on Indeed.com identified more than 50 nursing informatics job postings in Maryland alone, with roles such as Clinical Informatics Specialist, Nursing Informatics Specialist, and Ambulatory Informatics Training Analyst in high demand³². The growing integration of AI, especially in clinical decision support, predictive analytics, and documentation systems, is also shifting expectations for nursing practice. Health systems now seek professionals who can link clinical insight with data science to inform care delivery and organizational strategy.

Together, these trends present a compelling case for expanding access to informatics education. The NI-PBC program serves as a vital mechanism to ensure a well-prepared pipeline of nurse informaticians

²⁹ MD Occupational Projections: <https://labor.maryland.gov/lmi/iandoprojshort/>

³⁰ MD Industry Projections: <https://labor.maryland.gov/lmi/iandoprojshort/industryshort.shtml>

³¹ AACN Enrollment Report: <https://www.aacnnursing.org/news-data/all-news/new-aacn-data-points-to-enrollment-challenges-facing-us-schools-of-nursing>

³² Indeed.com: <https://www.indeed.com/q-Nursing-Informatics-l-Maryland-jobs.html?vjk=6e28e6b4e3af5068>

capable of advancing healthcare innovation, improving patient outcomes, and supporting system-wide transformation.

4. Provide data showing the current and projected supply of prospective graduates

By offering a targeted, competency-based pathway embedded within the MSN-NI infrastructure, the NI-PBC program equips nurses and health professionals to lead in technology-enabled environments. Although the number of graduates has remained modest, the reduction in credit requirements, from 19 to 12, is expected to broaden interest among prospective students, particularly those focused on data governance and digital health equity. To track emerging interest, a “Join the Notification List” feature was added to the NI-PBC admissions page. As of December 2025, 112 prospective applicants have expressed interest. The following table provides a longitudinal overview of admissions, enrollment, graduation, and employment outcomes for the NI-PBC program.

AY	Applicants	Total Enrolled	Graduates	Employment Rate
2015-2016	6	3	1	100%
2016-2017	1	2	1	100%
2017-2018	4	1	1	100%
2018-2019	7	4	0	-
2019-2020	7	4	1	100%
2020-2021	5	6	1	100%
2021-2022	6	7	3	100%
2022-2023	6	6	2	100%
2023-2024	7	5	1	100%
2024-2025	11	9	0	-

D. Reasonableness of Program Duplication

No other schools of nursing in Maryland offer a post-baccalaureate certificate in nursing informatics. However, Maryland nurses have other online options for certificate programs in health or clinical informatics. UMSON’s online format enhances the program’s ability to maintain enrollment in an increasingly competitive environment where out-of-state online programs offer substantial duplication and competition to programs within the State. UMSON’s program also facilitates the practicum placements for students ensuring a high-quality learning experience for students.

Although post-baccalaureate certificate programs are not individually accredited by the Commission on Collegiate Nursing Education (CCNE), the NI-PBC coursework is fully integrated within the Master of Science in Nursing – Nursing Informatics (MSN-NI) area of concentration, which was granted full accreditation through 2034 following a 10-year reaffirmation in 2024. Aligned with CCNE standards, the Maryland Board of Nursing (MBON) conducted a comprehensive site visit in fall 2024. At the February 2025 MBON Open Session, board members accepted the findings, confirming that all UMSON programs met the requirements outlined in *COMAR 10.27.03.02–16: Nursing Education Program standards*.

E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

No Historically Black Institutions (HBIs) in Maryland offer a post-baccalaureate certificate in NI, so there is no impact on programs at HBIs.

F. Relevance to the identity of Historically Black Institutions (HBIs)

There is no change in impact because of the modification to the NI-PBC curriculum on the uniqueness and institutional identities and missions of HBIs.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes

1. Describe how the proposed program was established and also describe the faculty who will oversee the program.

The American Association of Colleges of Nursing (AACN) published *The Essentials: Core Competencies for Professional Nursing Education (Essentials)* which calls for a transition to competency-based education focusing on two levels of professional nursing education: entry-level and advanced-level nursing practice. This proposal revises and formalizes the online NI-PBC curriculum. The revised NI-PBC curriculum will have the same oversight, quality control, and student services that the current high-quality MSN-NI and NI-PBC program has. Dr. Lori Edwards, associate dean for the MSN program, will maintain curricular oversight of the PBC program. Dr. Cheryl Fisher and Dr. Charlotte Seckman, co-directors of the MSN-NI program, are responsible for multiple supervisory tasks related to the management of the NI team, curriculum delivery, and quality. Please see Appendix D for a list of program faculty. The UMSON MSN curriculum committee and the faculty governance structure at UMSON have final decision-making authority regarding the MSN and PBC curriculum.

2. Describe educational objectives and learning outcomes appropriate to the rigor, breadth, and (modality) of the program.

The program modality is primarily on-line asynchronous didactic instruction although some courses may include live class time with interactive web-conferencing synchronous experiences. The program includes a total of 225 practicum hours. The online format allows flexibility for the working adult student and involves a variety of teaching strategies to address diverse learning styles. Many of the courses include real-world experience and application of content for a total of 225 practicum hours.

The NI-PBC program outcomes have been revised to reflect changes in the new *Essentials*. A NI-PBC graduate:

1. Demonstrate leadership, new knowledge, and skills using informatics and industry tools to assess, design, develop, implement, and evaluate the effectiveness of health informatics products and practices.
2. Have essential knowledge and skills in information and communication technology to provide care for patients, communities, and populations at the advanced practice level.
3. Apply principles of data management and databased systems to generate information, knowledge, and wisdom to improve outcomes for patients' communities and populations.
4. Integrate concepts of information management, health policy, social determinants of health and patient care technologies to support health equity in diverse populations through a variety of practice projects.
5. Envision, identify, develop, and evaluate technology and informatics solutions for problems using innovative approaches.

3. Explain how the institution will: provide for assessment of student achievement of learning outcomes in the program document student achievement of learning outcomes in the program

Student achievement of learning outcomes is measured and documented across the program of study, increasing in complexity, and demonstrated across different practice populations. Faculty use a multitude of assessment tools such as performance rubrics, exams, quizzes, assignments, and weekly feedback to the student about their achievement of daily, weekly, and course objectives. The program objectives are met by successful completion of the program of study as described in Appendix E.

4. Provide a list of courses with title, semester credit hours and course descriptions, along with a description of program requirements

Study Plan: Appendix E

Course Descriptions: Appendix E

5. Discuss how general education requirements will be met, if applicable.

Admission Requirement(s)

- a bachelor’s degree or higher
- an active, unrestricted U.S. registered nurse license for the state in which your practicum is located.

Work Experience: N/A

Transfer of Credits and Course Waiver

Students enrolled in a certificate program cannot transfer credits from another institution to meet the certificate requirements. A student may request a waiver of a course already completed at another institution that is required for a certificate. If the waiver of that particular course is approved by the faculty member, the student will have to take additional credits to complete the certificate. This is the same waiver policy that currently exists for degree programs.

6. Identify any specialized accreditation or graduate certification requirements for this program and its students.

Upon program completion, graduates are eligible to sit for the ANCC Informatics Nursing Certification exam after completion of an additional 65 practice hours in informatics.

7. If contracting with another institution or non-collegiate organization, provide a copy of the written contract.

Not applicable.

8. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.

Category	Evidence	Weblink
Curriculum; degree requirements	Certificates	https://www.nursing.umaryland.edu/academics/certificates/
	NI-PBC	https://www.nursing.umaryland.edu/academics/certificates/nursing-informatics/

	Handbook	https://www.nursing.umaryland.edu/student-life/handbook/
Faculty/student interaction	Handbook	https://www.nursing.umaryland.edu/student-life/handbook/
Technology	Handbook	https://www.nursing.umaryland.edu/student-life/handbook/
	Student Life	https://www.nursing.umaryland.edu/student-life/
	Technology	https://www.nursing.umaryland.edu/technology/
Academic support services	Handbook	https://www.nursing.umaryland.edu/student-life/handbook/
	Student Life	https://www.nursing.umaryland.edu/student-life/
	Office of Academic and Career Success	https://www.nursing.umaryland.edu/student-life/office-of-academic-and-career-success/
Financial	Financial Aid and Scholarships	https://www.nursing.umaryland.edu/admissions/financial-aid/
	Handbook	https://www.nursing.umaryland.edu/student-life/handbook/
	Admissions	https://www.nursing.umaryland.edu/admissions/
	Tuition and Fees	https://www.nursing.umaryland.edu/admissions/tuition/

9. Provide assurance and any appropriate evidence that advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available.

Category	Evidence	Weblink
Advertising	Copyright Privacy Statement	https://www.nursing.umaryland.edu/about/administration/offices/comm/copyright-privacy/
	Communications	https://www.nursing.umaryland.edu/about/administration/commms/
	Publications	https://www.nursing.umaryland.edu/news-events/archive/
	The Elm	https://elm.umaryland.edu/nursing/
	Handbook	https://www.nursing.umaryland.edu/student-life/handbook/
Recruiting and Admissions	Admissions	https://www.nursing.umaryland.edu/admissions/
	Program Explorer	https://www.nursing.umaryland.edu/admissions/program-explorer/
	UMSON On the Road	https://www.nursing.umaryland.edu/admissions/visit-us/umson-on-the-road/
	Visit Us	https://www.nursing.umaryland.edu/admissions/visit-us/

H. Adequacy of Articulation

Not applicable.

I. Adequacy of Faculty Resources

1. Provide a brief narrative demonstrating the quality of program faculty. Include a summary list of faculty with appointment type, terminal degree title and field, academic title/rank, status (full-time, part-time, adjunct) and the course(s) each faculty member will teach in the proposed program.

Since UMSON has offered the NI-PBC program, which is fully integrated within the MSN-NI curriculum, the faculty and resource infrastructure already exist to support the proposed modifications. The NI faculty consists of experienced nurses who have taught across the curriculum and bring a breadth of interdisciplinary expertise that enriches student learning. Their backgrounds span diverse areas including the application of informatics in longitudinal intervention trials; the development of intelligent software agents, algorithms, and systems for analyzing large-scale biomedical data such as healthcare, genomic, and clinical datasets; and the translation of evidence into healthcare practice. Faculty also possess expertise in optimizing computerized provider order entry systems, assessing the usability and implementation of electronic medical records, advancing community and cognitive engagement in online learning modalities, and applying computer science and artificial intelligence in clinical settings. In addition, they examine the impact of health information technologies on nursing practice, patient safety, and quality of care, and support information systems across sectors such as healthcare, finance, e-business, and e-commerce. This collective expertise ensures a robust academic environment that supports student development and advances the goals of the NI-PBC program. Appendix D lists faculty with appointment type, terminal degree, academic title/rank, and status.

2. Demonstrate how the institution will provide ongoing pedagogy training for faculty in evidenced-based best practices, including training in: a) pedagogy that meets the needs of the students; b) the learning management system; c) evidenced-based best practices for distance education, if distance education is offered.

UMB has a robust process for training faculty through the Institute for Educators³³. The institute provides ongoing professional development for faculty and educators to ensure effective instruction. Based on Quality Matters standards, UMB developed a rubric which details the best practices for distance education. This rubric helps faculty and instructional designers create the courses; assesses the readiness of the course and ensures that the online courses are instructionally and pedagogically sound. The best practices are a synthesis of strategies, activities, design techniques, and 20 organizational items that have been successful in higher education. The specific domains of this checklist are as follows:

- Course overview and introduction to the students
- Course organization and design
- Learning Objectives (competencies)
- Instructional Materials
- Learner Communication, Interaction and Collaboration
- Assessment and Evaluation (measurement)
- Course Technology
- Learner Support

The Learning Management Platform UMB utilizes and provides IT support for is the Blackboard Learning Management System for online and in-person course delivery. Within Blackboard is the Collaborate conferencing software that is used for synchronous live activities. UMSON's Office of Learning Technology is dedicated to improving the quality of teaching, learning, research, and community service through technology. Services provided by the office include instructional design and technology, video production, distance education, online learning, and faculty development in teaching with technology.

J. Adequacy of Library Resources

³³ UMSON Institute for Educators: <https://www.nursing.umaryland.edu/institute-for-educators/>

While post-baccalaureate certificate programs are not accredited by the Commission on Collegiate Nursing Education (CCNE), the Master of Science NI (MSN-NI) area of concentration was accredited for 10 years in 2024. Professional accreditation focuses specific attention on the adequacy of library resources. UMSON students completing their degree can use the UMB Health Science and Human Service Library (HS/HSL).

Health Sciences and Human Services Library (HS/HSL) Facilities and Resources³⁴

The University of Maryland, Baltimore (UMB) Health Sciences and Human Services Library (HSHSL) serves as a hub for collaboration and learning on the UMB campus and is one of the largest health sciences libraries in the United States both physically and by collection size. Opened in 1998, the HSHSL building is fully equipped with Wi-Fi and has seating for over 800 users including 41 group study rooms, three computer classrooms, an Innovation Space that includes 3D printers, a presentation and production studio, art gallery, and technology-enhanced meeting and collaboration spaces. The HSHSL website (www.hshsl.umaryland.edu) provides access to a range of resources and services to the UMB community.

The library provides access to 105 databases, 3,798 e-journals, 18,055 e-books, and maintains a collection of 144,632 print books and 7,586 archival print journals. Through the library's interlibrary loan and document delivery services, faculty, staff, and students may acquire articles and other resources not available through the library's collections at little or no cost to the individual. The HSHSL also provides access to the UMB Digital Archive, an open access university repository hosting university created research including white papers, research posters, and more.

The HSHSL has a track record of innovative and user-centered services. With a team of 26 faculty librarians and 28 library staff, the HSHSL serves UMB's 6,900 students and over 8,000 faculty and staff members in the schools of dentistry, medicine, nursing, pharmacy, social work, and graduate studies. The library also provides in-person access to services and resources to the University of Maryland Medical Center and other affiliated institutions. The library's suite of research services (www2.hshsl.umaryland.edu/rel/) is available for all programs on campus, and includes research and publication strategy consultations, systematic review and expert literature searching services, research impact assessment, public access policy compliance review, and other research services as requested. The library's Center for Data and Bioinformation Services offers consultations and workshops on data access, management, and sharing, as well as support for bioinformatics research, including information on high throughput sequence analysis, DNA, RNA, protein data resources, and research computing.

The HSHSL is home to the National Network of Libraries of Medicine (NNLM) Region 1, an outreach program of the National Library of Medicine, whose mission is to advance the progress of medicine and improve public health and access to health information. The HSHSL has held this competitive and prestigious grant funded designation for over

35 years. In 2021, the HSHSL was also selected to host the NNLM Web Services Office (NWSO), which develops and maintains web services for all seven NNLM Regions and other NNLM centers. Through its outreach programming with the NNLM Region 1, the HSHSL regularly reach over 3,000 community members and unaffiliated groups through free workshops, exhibits, and presentations on topics including health literacy, data management, and citizen science.

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment

UMSON currently offers the NI-PBC program and other coursework, through established online and face-to-face modalities. The institution maintains state-of-the-art physical facilities, comprehensive

³⁴ HS/HL By the Numbers: <https://www.hshsl.umaryland.edu/about/bythenumbers.php>

instructional infrastructure, and advanced technology systems that collectively support high-quality delivery across both formats.

No additional space, capital investments, or instructional equipment are anticipated, as existing assets have demonstrated their capacity to support enrollment growth and evolving program needs. Classroom spaces, simulation labs, and remote learning platforms are maintained to institutional standards and routinely evaluated to ensure sustainability, accessibility, and innovation.

Digital tools and software platforms, such as Blackboard learning management system, simulations, and assessment tools, are institutionally licensed and funded. These resources meet accreditation requirements and pedagogical standards while fostering student engagement, clinical reasoning, and competency development. The current infrastructure not only accommodates the online NI-PBC but positions UMSON to expand or adapt program offerings without requiring further capital expenditure.

UMSON's physical and digital infrastructure reflects a long-standing commitment to educational excellence, regulatory compliance, and fiscal responsibility. Based on current delivery methods and projected enrollment, no additional facilities, equipment, or instructional technologies are required at this time.

L. Adequacy of Financial Resources with Documentation

Revising the NI-PBC program will not require new state funds. Over time, based on changes in education, technology and student demand, UMSON has incrementally increased its use of learning technologies and faculty technology expertise. Therefore, offering the revised curriculum will not result in additional expense and no new general funds will be required for implementation.

Existing faculty and staff resources are sufficient to support the transition to the NI-PBC program. Library and other resources are adequate for this modification to the UMSON offerings. Please see Appendix B and Appendix C for resource and expenditures.

M. Adequacy of Provisions for Evaluation of Program

1. Discuss procedures for evaluating courses, faculty and student learning outcomes.

The majority of nursing programs, including UMSON programs, rely heavily on professional accreditation as the primary means of evaluation and quality control. Professional accreditation is based on a national consensus around student competencies and program standards. UMSON's Master Evaluation Plan requires the annual evaluation of courses, faculty performance, and student learning outcomes. At the end of each term, students complete a course evaluation questionnaire and a faculty evaluation questionnaire. Department chairs and associated deans collaboratively review this information at the end of the term to determine if course/program revisions or faculty development are needed. In addition, retention/graduation data, program assessment questionnaires, alumni questionnaires, employment data and certification exam pass rates are reviewed by the associate dean annually. This plan and the resulting findings were reviewed during the October 2024 Commission on Collegiate Nursing Education (CCNE) reaccreditation process.

Because post-baccalaureate certificate programs are not eligible for separate CCNE accreditation, a substantive change notice is not required for implementation. However, UMSON will submit a substantive change notification to the Maryland Board of Nursing (MBON) following MHEC approval and prior to implementation, as required.

Given that UMSON's MSN-NI program is an accredited competency-based program, all graduates are expected to demonstrate a defined set of core competencies. The NI-PBC curriculum will align with these same competencies across course sections to ensure consistency and maintain academic quality.

2. Explain how the institution will evaluate the proposed program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.

As noted above, each semester, students evaluate the courses in which they were enrolled. The evaluation includes an anonymous online assessment of various aspects of the course as well as the student's perspectives on the quality of instruction. Results of these evaluations are compiled, analyzed, and reviewed by faculty and UMSON administration and are used for course improvement and faculty development. In addition, retention/graduation data, program assessment questionnaires, alumni questionnaires, employment data and certification exam pass rates are reviewed by the associate dean annually.

Students enrolled in the NI-PBC program are required to meet core competencies. The curriculum for the NI-PBC program is designed to meet the essential elements or outcomes of advanced, graduate level education as set forth by the *AACN Essentials*. Student achievement of these program outcomes is required for program completion as well as for program accreditation. In addition to meeting the AACN curriculum standards, for graduates to be eligible for national board certification in the specialty, the curriculum and program outcomes must meet the standards and competencies of related professional nurse certification. Graduates of the NI-PBC can seek national certification through the American Nurses Credentialing Center (ANCC).

Evaluation of student progress and achievement is determined by:

- Examinations of core and specialty knowledge.
- Practicum evaluations
- Evaluation of written papers, projects, and case studies.

Evaluation of Faculty is determined by:

- Student Course Evaluation of Instructional Effectiveness is completed at the end of the term as described above.
- Faculty performance is evaluated annually, and areas of teaching needing improvement are addressed by the faculty member's department chair. UMSON has an Associate Dean for Faculty Development, as well as the Institute for Educators, that provide one on one consultations and workshops to further develop teaching expertise.³⁵

N. Consistency with the State's Minority Student Achievement Goals

The NI-PBC program adheres to the University's Notice of Non-Discrimination in all recruitment and admission activities. The program admits qualified students regardless of their race, ethnicity, religion, sex, sexual orientation, national origin, age, disability or veteran status. NI-PBC program leadership regularly meets with the UMB Institutional Effectiveness Office to examine admission, retention and graduation rates across and among various groups of students.

The NI-PBC program provides a variety of learning experiences and flexible offerings designed to address the needs of a diverse student body. UMSON's Office for Academic and Career Success provides services such as guided study sessions, peer tutoring and additional types of academic support.

³⁵ UMSON Institute for Educators: <https://www.nursing.umaryland.edu/institute-for-educators/>

O. Relationship to Low Productivity Programs Identified by the Commission

Not applicable.

P. Adequacy of Distance Education Programs

The NI-PBC program provides appropriate real-time and delayed interaction between faculty and students. All NI faculty members maintain office hours during which they are available via telephone, email, videoconferencing, or through the Blackboard learning platform which provides the means for both synchronous and asynchronous interactions between faculty and students and among students.

Courses specific to the NI-PBC were designed by experts in nursing informatics and instructional design personnel to assure that distance education courses operate efficiently and with ease for students. Technology evaluation is included in course evaluations. The appropriateness of the specific technology used is determined through faculty and student feedback as part of the ongoing curricular evaluation process.

Under the direction of the Assistant Dean, Information and Learning Technology³⁶, a highly skilled staff of instructional technology specialists provide ongoing training for faculty teaching with technology in a distance education format. Training includes the use of the Blackboard Learning Management System and other technology necessary for effective teaching in a distance education environment. The Institute for Educators within the UMSON provides professional development on the pedagogy of distance education provided by faculty experts in online teaching. These sessions are offered in the form of grand rounds and webinars covering topics ranging from creative online teaching approaches to evaluation of online learning.

UMSON principles of best practices for online teaching and learning are based on Quality Matters (QM) principles³⁷. QM provides a comprehensive framework for assuring the quality of online education and student learning. QM principles provide the basis for the use of evidence-based approaches to online teaching and the ongoing evaluation of outcomes. Faculty enhance the quality of their online teaching by enrolling in QM training or by attending UMSON professional development workshops.

All students enrolled in distance education courses have access to the same library services as students enrolled in campus-based courses. With a username and password, students can access a variety of databases, journals, eBooks, reference managers, and other resources and services. Workshops, tutorials, a digital archive, and expert advice for the use of library resources are available from the HS/HSL librarians assigned to academic programs. Specific instructions for off-campus access are available online.

Students enrolled in UMSON distance education have the same access to information as students enrolled in face-to-face education. The UMSON website³⁸ provides clear, complete, and timely information for both face-to-face and distance students on curriculum and degree requirements, technology competence and skills, and technical equipment requirements to engage in online learning. Online tutorials and resources are available to assist students to use the Blackboard Learning Management System. Online course information provides students with information about accessing faculty, faculty availability and modes of communication including synchronous and asynchronous interactions.

³⁶ UMSON Technology: <https://test-www.nursing.umaryland.edu/technology/>

³⁷ Quality Matters: <https://www.qualitymatters.org/index.php/>

³⁸ UMSON website: <https://www.nursing.umaryland.edu/>

Information about student support services is provided on the UMSON website for all students, both traditional and online. The website provides information on academic support services, student organizations and activities, tuition and fees, and financial aid resources and policies.

The Blackboard Learning Management System provides 24-hour online help, and during regular business hours, the UMSON help desk is available via telephone and email. The UMSON Student Success Center provides remote access for student assistance and the HS/HSL provides online resources to assist students in literature searches, managing references, and other skills needed for graduate education.

**APPENDIX A
NI-PBC CURRICULUM COMPARISON**

Course	Pre-2026 Title	Credits
NURS 736	Technology Solutions for Generating Knowledge in Health Care	3
NURS 784	Information Technology Project Management	3
NURS 786	Systems Analysis and Design in Healthcare	3
NURS 785	Healthcare Database Systems	3
NURS 737	NI Concepts and Practice in Systems Adoption	3
NURS 738	NI Practicum in Nursing Informatics	4 (135)

TOTAL 19 CREDITS (135 Practicum Hours)

Course	Post 2026 Title	Credits*
NRSG 781	Essentials in Healthcare Informatics	3
NRSG 789	Project Management for Healthcare Information and Communication Technology	3
NRSG 787	Systems Analysis and Design	3 (90) <i>1 DID/2 PRCM</i>
NRSG 737	Practicum in Nursing and Health Informatics I	3 (135) <i>0 DID/3 PRCM</i>

TOTAL 12 CREDITS (225 Practicum Hours)

** DID = Didactic Credit; PRCM = Practicum Credit*

**APPENDIX B
PROGRAM RESOURCES**

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	0	0	0	0	0
2. Tuition/Fee Revenue	82,433	133,580	136,252	138,977	141,756
(c + g below)	0	0	0	0	0
a. Number of F/T Students	0	0	0	0	0
b. Annual Tuition/Fee Rate	0	0	0	0	0
c. Total F/T Revenue (a x b)	0	0	0	0	0
d. Number of P/T Students	15	30	30	30	30
e. Credit Hour Rate	0	0	0	0	0
f. Annual Credit Hour Rate	0	0	0	0	0
g. Total P/T Revenue	0	0	0	0	0
(d x e x f)	0	0	0	0	0
3. Grants, Contracts & Other External Sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 – 4)	82,433	133,580	136,252	138,977	141,756

The UMSON tuition and fee structure is multi-layered and is based upon a student’s residency status (in-state vs. out-of-state), full-time vs. part-time, number of credit hours, semester of study in the program, etc. It does not allow for the formulaic approach called for in the program resource table. We have built in a 2% increase consistent with what has historically been approved by UMB President's office, the University System of Maryland Board of Regents and the State of Maryland Governor’s office.

**APPENDIX C
PROGRAM EXPENDITURES**

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty	61,759	123,518	125,988	128,507	131,078
a. Number of FTE	.37	.74	.74	.74	.74
b. Total Salary	47,764	95,528	97,439	99,387	101,375
c. Total Benefits	13,995	27,990	28,549	29,120	29,703
2. Admin. Staff	2,358	4,715	4,809	4,906	5,004
a. Number of FTE	.03	.05	.05	.05	.05
b. Total Salary	1,704	3,407	3,475	3,545	3,616
c. Total Benefits	654	1,308	1,334	1,361	1,388
3. Support Staff	0	0	0	0	0
a. Number of FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
4. Technical Support and Equipment	0	0	0	0	0
5. Library	0	0	0	0	0
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses					
TOTAL	64,117	128,233	130,797	133,413	136,082

The expenses in the above table represent allocations for the proposed Nursing Informatics Post-Baccalaureate program.

The faculty and staff salary and fringes shown on the program expenditures table represent an allocation based on FTE effort for this certificate program. The salary and fringes in years 2-5 include a 2% adjustment for estimated COLA/merit increases.

Similar to staff support, the enrollment in this certificate program is not expected to require any additional significant technical support and equipment, library or other expenses and accordingly no expense allocations have been appropriated for those expenses

**APPENDIX D
NI-PBC FACULTY**

Last Name	First Name	Title	Highest Degree	Field of Study	Type of Course	FTE Status	Courses
Fisher	Cheryl	Associate Professor Specialty Co-Director, Nursing Informatics Specialty Co-Director NI Certificate	EdD	Informatics, Instructional Technology, decision support	Online, didactic and practicum	F/T	NRS 737
Seckman	Charlotte	Associate Professor Specialty Co-Director, Nursing Informatics Specialty Co-Director NI Certificate	PhD	Informatics, evaluation of informatics competencies, decision support, usability evaluation	Online, didactic	F/T	NRS 789
Stephens	Cory	Assistant Professor	DNP	Informatics, clinical decision support, promoting data integration; technologies into practice	Online, didactic	F/T	NRS 789 NRS 781
Kelemen	Arpad	Professor	PhD	Biomedical informatics; database development, healthcare software; human-computer interaction; intelligent patient care technologies; artificial intelligence; data mining	Online, didactic	F/T	
Opoku-Agyemang	Ernest	Assistant Professor	PhD	information systems in healthcare, finance, e-business and e-commerce.	Online, didactic	F/T	NRS 787

**APPENDIX E
PLAN OF STUDY AND COURSE DESCRIPTIONS**

Course	Title	Credits
NRSG 781	Essentials in Healthcare Informatics	3
NRSG 789	Project Management for Healthcare Information and Communication Technology	3
NRSG 787	Systems Analysis and Design	3 (90)
NRSG 737	Practicum in Nursing and Health Informatics I	3 (135)
TOTAL 12 CREDITS (225 Practicum Hours)		

NRSG 781: Essentials in Healthcare Informatics, 3 credits

This introductory course builds knowledge, skills and abilities necessary to work in an information technology enabled healthcare environment. This course focuses on the application of information and communication technologies that support the provision of care including social context, availability of technology, human factors, and type of information along with social-technical, legal, regulatory and ethical concerns. Emerging technologies and contemporary issues are highlighted.

NRSG 789: Project Management for Healthcare Information and Communication Technology, 3 credits

This course will build an array of abilities (knowledge, skills, and attitudes) necessary for the nursing informatics student to develop competence in project management related to healthcare information and communication technologies (ICT). Students will explore the role of the project manager along with the practical application of various project management activities within a healthcare IT context. By the end of the course, students will apply concepts and demonstrate skill utilizing various industry standard tools to initiate, plan, execute, control/monitor, and close a simulated ICT project.

NRSG 787: Systems Analysis and Design, 3 credits

This course will apply knowledge of the systems development life cycle (SDLC) in which technical, organizational, and human aspects are assessed to create improvements in health care delivery. Various principles, methods, and tools will be explored and applied. This course will prepare students for the role of the informatics nurse who engages in discrete work elements, serves in leadership positions, and contributes in many diverse ways to the systems analysis and design process. This course includes practice hours for students to apply knowledge related to a healthcare information system.

NRSG 737: Practicum in Nursing and Health Informatics I, 3 credits

This course will build an array of abilities (knowledge, skills, and attitudes) necessary for the nursing informatics student to develop competence in the role of the Informatics Nurse Specialist, including system selection, implementation, analysis, design, and evaluation. Students will build upon knowledge, skills and abilities introduced in previous informatics courses. Organizational and informatics theories, models, and concepts are considered in relation to information systems in health care. The students will analyze technology standards in systems development to include standardized languages, terminologies, and classifications. Students will apply critical thinking and analytic skills to discussions and assignments. This course includes 135 practice hours where students will apply knowledge to a real-life health care delivery problem.