HELLENIC REPUBLIC

National and Kapodistrian University of Athens

POSTGRADUATE STUDIES GUIDE
Master of Science (MSc) in "Advanced Clinical Nursing"
Academic Years 2025/26 and 2026/27

FOUNDATION AND MISSION

The Department of Nursing was established in 1979 as a four-year program at the Medical School of the National and Kapodistrian University of Athens (NKUA) and commenced its academic operations in 2025-1981. Since 1983, it operates as an independent and equal university department under the Faculty of Health Sciences. The mission of the Department is to develop, transmit, and apply nursing science through comprehensive theoretical and clinical training, producing scientists capable of practicing nursing at national and international levels.

POSTGRADUATE PROGRAM OVERVIEW & FEES

The MSc program 'Advanced Clinical Nursing' focuses on high-level postgraduate specialization across three distinct professional tracks: Intensive Care, Cardiovascular Diseases, and Surgical Nursing. The normal duration is four (4) academic semesters, requiring a total of 120 ECTS. Attendance is mandatory. Tuition fees are set at €2,000 in total (€500 per semester) to cover administrative and specialized teaching costs.

SEMESTER A – COMMON TO ALL SPECIALIZATIONS

The first semester provides foundational methodology, statistics, and advanced bio-informatics necessary for clinical practice and scientific inquiry. It requires 30 total ECTS, including 4 mandatory modules and 1 elective.

Course Title	Semester Hours	ECTS
Biostatistics (Mandatory)	30	7.0
New Technologies and Imaging in Daily Clinical Practice (Mandatory)	30	7.0
Research Methodology (Mandatory)	30	7.0
e-Health and Applications (Mandatory)	20	4.5
Health Law (Elective - Choose One)	20	4.5
Transcultural Health (Elective - Choose One)	20	4.5
TOTAL SEMESTER A	**130**	**30.0**

Semester A - Course Outlines

Biostatistics (ECTS: 7)

Aim: To understand biostatistical principles, formulate statistical hypotheses, manage sample data, execute healthcare technical computations, and master IBM SPSS analytics.
Content: Descriptive biostatistics, probability theory, theoretical distributions, sample mean distribution, confidence intervals, hypothesis testing, comparison of two means, ANOVA, non-parametric methods, contingency tables, data analysis applications using IBM SPSS.

New Technologies and Imaging in Daily Clinical Practice (ECTS: 7)

Aim: To train postgraduate students in clinical integration of emerging biomedical technologies (nanotechnology, robotics, 3D medical printing, AI, genetics) and radiological diagnostic baselines.
Content: Innovative therapeutic technology, robotics, 3D printing in health sciences, medical ultrasound guidelines (thoracic, cardiac, ascitic, pleuritic effusions), hemodynamic lab profiles, ECG interpretation, gene diagnostics, electro-interstitial scans (EIS).

Research Methodology (ECTS: 7)

Aim: Provide framework mastery of quantitative, qualitative, and mixed experimental protocols, data mining indexes, systematic reviews, and meta-analyses.
Content: Research design stages, hypothesis testing parameters, advanced PubMed queries,

qualitative data collection tools, systematic errors, research ethics, meta-analysis validation criteria (CONSORT, PRISMA, STROBE).

e-Health and Applications (ECTS: 4.5)

Aim: Equip students with systemic concepts of Electronic Health Records (EHR) architectures, healthcare cloud parameters, and mHealth software tools.
Content: Healthcare information systems architecture, Technical and Semantic Interoperability frameworks (HL7, FHIR, SNOMED CT), Big Data clinical registries, Smart Wearable Systems (SWS), Internet of Things (IoT) in diagnostics, Ambient Assisted Living (AAL).

Health Law (Elective, ECTS: 4.5)

Aim: Understand fundamental health legislation structures, bioethical clinical frameworks, malpractice code liabilities, and forensic patient advocacy parameters.
Content: Sources of health law, Code of Nursing Ethics, patient informed consent, professional liability, data privacy standards (GDPR), bioethical issues at the beginning/end of life, transplantation legals.

Transcultural Health (Elective, ECTS: 4.5)

Aim: Enable systematic delivery of culturally competent, patient-centric healthcare for migrant, refugee, and vulnerable populations.
Content: Intercultural communication principles, health and cultural disparities, international migration health policies, psychiatric cross-cultural perspectives, integrative complementary medicine frameworks.

SEMESTER B – TRACK-SPECIFIC SPECIALIZATIONS

TRACK 1: INTENSIVE AND EMERGENCY CARE NURSING (Semester B)

Module Title	Hours	ECTS
Scientific Writing Techniques (Mandatory)	20	4.5
Specialized Clinical Topics (Mandatory)	30	7.0
Circadian Rhythms in Health and Disease (Mandatory)	40	9.5
Specialized Therapies in Intensive Care (Mandatory)	20	4.5
Special Topics in Nursing (Elective - Choose One)	20	4.5
Management of Acute Cardiovascular Problems (Elective - Choose One)	20	4.5
Vascular Access I (Elective - Choose One)	24	5.5
TOTAL TRACK 1 - SEMESTER B	**130**	**30.0**

Track 1 Semester B - Course Outlines

Scientific Writing: Academic publications structure, impact factors, Vancouver citation standards, oral presentation slide setups.
Specialized Clinical Topics: Fever pathophysiology, pain indices, dyspnea scaling, nosocomial infection mechanisms, systemic nutritional balances.
Circadian Rhythms: Chronobiology baselines, 24-hour cycle clock parameters, circadian ICU disruptions, treatment scheduling profiles.
Specialized Therapies in the ICU: Organ failure pathways, severity scores (APACHE, SOFA), advanced mechanical ventilation mechanics, sedation-analgesia metrics.
Special Topics in Nursing :Enhancing student knowledge through critical analysis of contemporary issues impacting nursing practice
Vascular Access I: Anatomy profiles of vascular structures, device selection baselines (materials, polyurethane vs Teflon), ultrasound-guided entry protocols, complication minimization indices
Management of Acute CV Problems: Interdisciplinary management of acute coronary syndromes, cardiogenic shock pathways, cardiac arrhythmias, CPR protocols, aortic aneurysms.

TRACK 2: CARDIOVASCULAR DISEASES NURSING (Semester B)

Module Title	Hours	ECTS
Scientific Writing Techniques (Mandatory)	20	4.5
Special Topics in Nursing (Mandatory)	24	5.5
Specialized Clinical Topics (Mandatory)	24	5.5
Circadian Rhythms in Health and Disease (Mandatory)	20	4.5
Management of Acute Cardiovascular Problems (Mandatory)	24	5.5
Management of Chronic Cardiovascular Problems (Mandatory)	20	4.5

Track 2 Semester B - Course Outlines

Scientific Writing: Academic publications structure, impact factors, Vancouver citation standards, oral presentation slide setups.
Specialized Clinical Topics: Fever pathophysiology, pain indices, dyspnea scaling, nosocomial infection mechanisms, systemic nutritional balances.
Circadian Rhythms: Chronobiology baselines, 24-hour cycle clock parameters, circadian ICU disruptions, treatment scheduling profiles.
Special Topics in Nursing :Enhancing student knowledge through critical analysis of contemporary issues impacting nursing practice
Management of Acute CV Problems: Interdisciplinary management of acute coronary syndromes, cardiogenic shock pathways, cardiac arrhythmias, CPR protocols, aortic

aneurysms.
Management of Chronic CV Problems: Chronic ischemic heart disease clinical baselines, cardiomyopathies, cardiac surgery perioperative nursing, transplantation indexes, palliative care standards.

TRACK 3: SURGICAL NURSING (Semester B)

Module Title	Hours	ECTS
Special Topics in Nursing (Mandatory)	24	5.5
Specialized Clinical Topics (Mandatory)	24	5.5
Circadian Rhythms in Health and Disease (Mandatory)	20	4.5
Scientific Writing Techniques (Mandatory)	20	4.5
Surgical Oncology Patient Approach & Orthomolecular Nutrition (Mandatory)	20	4.5
Vascular Access I (Mandatory)	24	5.5

Track 3 Semester B - Course Outlines

Scientific Writing: Academic publications structure, impact factors, Vancouver citation standards, oral presentation slide setups.
Specialized Clinical Topics: Fever pathophysiology, pain indices, dyspnea scaling, nosocomial infection mechanisms, systemic nutritional balances.
Circadian Rhythms: Chronobiology baselines, 24-hour cycle clock parameters, circadian ICU disruptions, treatment scheduling profiles.
Surgical Oncology & Orthomolecular Nutrition: Integrative cancer care pathways, orthomolecular biochemistry metrics, antioxidant treatments, Gerson protocols, tumor microbiome parameters.
Vascular Access I: Anatomy profiles of vascular structures, device selection baselines (materials, polyurethane vs Teflon), ultrasound-guided entry protocols, complication minimization indices.
Special Topics in Nursing :Enhancing student knowledge through critical analysis of contemporary issues impacting nursing practice

SEMESTER C – TRACK-SPECIFIC ADVANCED SPECIALIZATIONS

TRACK 1: INTENSIVE AND EMERGENCY CARE NURSING (Semester C)

Module Title	Hours	ECTS
Intensive Care Unit Nursing (Mandatory)	30	7.0

Specialized Topics in Emergency Medicine (Mandatory)	30	7.0
Critical Transports, Prehospital Care and Telemedicine (Mandatory)	30	7.0
Sleep-Disordered Breathing (Mandatory)	20	4.5
Vascular Access II (Elective - Choose One)	20	4.5
Intensive Care and Mass Trauma (Elective - Choose One)	20	4.5

Track 1 Semester C - Course Outlines

ICU Nursing: ICU ergonomics, structural control designs, ventilator-associated pneumonia (VAP) bundle registries, central line-associated bloodstream infection (CLABSI) metrics, delirium scores, pressure ulcer tissue staging.
Advanced Emergency Medicine: ED clinical prioritization frameworks, 5-Level Triage algorithms, psychiatric emergencies, toxicological registries, human trafficking clinical response pathways.
Critical Transports & Telemedicine: Intrahospital and interhospital medical transports, mobile ICU parameters, aeromedical flight protocols, National Telemedicine Network (EDIT) parameters, tele-intensive care integration.
Sleep-Disordered Breathing: Neurobiology of sleep, polysomnography technical calibrations, scoring criteria registries, CPAP/BiPAP titration parameters.
Vascular Access II: Advanced clinical insertion techniques under real-time ultrasound guidance for central lines, tunnelization procedures, PICCs, Midlines, CICC Ports, dialysis catheter management rules.
Intensive Care and mass trauma :the presentation and understanding of the fundamental principles for the pre-hospital management of mass-casualty trauma, and the development of systems and operational organization for addressing it

TRACK 2: CARDIOVASCULAR DISEASES NURSING (Semester C)

Module Title	Hours	ECTS
Interventional Procedures in Cardiovascular Diagnosis and Treatment (Mandatory)	22	5.0
Organization and Management of Specialized Cardiology Units (Mandatory)	20	4.5
Cardiovascular Disease Prevention (Mandatory)	20	4.5
Cardiac Rehabilitation	20	4.5

(Mandatory)		
Enhancing Patient Self-Care in Chronic Illnesses (Mandatory)	20	4.5
Health Education (Mandatory)	30	7.0

Track 2 Semester C - Course Outlines

Interventional Procedures: Cardiac catheterization laboratory setup, coronary angiography workflows, percutaneous coronary intervention (PCI) monitoring, pacemakers, ICD device indicators, mechanical circulatory support (VAD) nursing care.
Organization and Management of Specialized Cardiology Units: Structural layout parameters for CCUs, ED cardio zones, cardiac surgery theaters, bioethical dilemmas, professional resource allocations.
Cardiovascular Prevention: Atherosclerosis pathology, primary vs secondary risk reduction scores, metabolic syndrome clinical registries, thromboembolic prophylaxis programs.
Cardiac Rehabilitation & Self-Care: Multi-phase recovery programs, exercise testing parameters, metabolic metrics, behavioral modification tracking, self-care assessment indexes across chronic conditions.
Health Education To understand the concept of health promotion as a new philosophy in the approach to health. To teach theories of behavior modification and the methodology of health education used to achieve the goals of health education and health promotion. To present and apply the process of designing health promotion programs.

TRACK 3: SURGICAL NURSING (Semester C)

Module Title	Hours	ECTS
Special Surgical Nursing Problems & Case Analyses (Mandatory)	30	7.0
Perioperative Nursing, Trauma, and Tissue Repair in Intractable Ulcers (Mandatory)	30	7.0
Experimental Studies and the Role of the Microbiome (Mandatory)	20	4.5
Vascular Access II (Mandatory)	30	7.0
Intensive Care and Mass Trauma (Mandatory)	20	4.5

Track 3 Semester C - Course Outlines

Special Surgical Nursing Problems: Enhanced Recovery After Surgery (ERAS) clinical pathways, Day Surgery Unit frameworks, cognitive shifts post-anesthesia, acute abdomen assessment criteria, surgical sepsis registries.
Perioperative Care & Tissue Repair: Wound healing physiology, intractable chronic ulcer tissue repair, ostomy care protocols, fluid-electrolyte balance metrics, hyperthermic intraperitoneal chemotherapy (HIPEC) safety codes.

Experimental Studies & Microbiome: Metagenomic tracking algorithms, gut-brain axis pathways, dysbiosis parameters in systemic inflammation, probiotic therapeutic validation, pre-clinical cell line models.
Vascular Access II: Advanced clinical insertion techniques under real-time ultrasound guidance for central lines, tunnelization procedures, PICCs, Midlines, CICC Ports, dialysis catheter management rules.
Intensive Care and mass trauma :the presentation and understanding of the fundamental principles for the pre-hospital management of mass-casualty trauma, and the development of systems and operational organization for addressing it

SEMESTER D – THESIS & CLINICAL PRACTICUM

The final semester is completely dedicated to operationalizing research competencies and executing the comprehensive clinical training mandate under direct university supervision.

Requirements Component	ECTS
Clinical Practicum Training (120 Hours on-site validation)	10.0
Master of Science (MSc) Thesis Compilation & Defense	20.0

MSc Thesis Regulations & Formats

The Master Thesis (20 ECTS) must undergo rigorous assessment by a three-member academic committee. It can be a clinical research study or an exhaustive systematic review. Layout formatting rules specify standard A4 paper size, Times New Roman or Arial size 12 font, 1.5 line spacing, and strict page margins (Left: 3.00cm, Right/Top/Bottom: 2.50cm). Academic integrity codes mandate advanced software sweeps for plagiarism; any confirmed deviation results in immediate academic dismissal and degree revocation.

7. ACADEMIC AND ADMINISTRATIVE DIRECTORY

Postgraduate Program Secretariat

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