# http://www.ric.edu/webcommunications/images/SealWithText_Small_Black.pnggraduate COMMITTEE curriculum PROPOSAL FORM

## A. Cover page (hover over text for more instructions)

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| --- | --- | --- |
| A.1[. Course](#_acknowledge) | NURS 514 aDVANCED PHARMACOLOGY FOR NURSE ANESTHESIA PRACTICE |  |
| [Replacing](#Ifapplicable)  |  |  |
| Academic Unit | School of Nursing  |  |
| A.2. [Proposal type](#type) | Course: revision  |  |
| A.3. [Originator](#Originator) | Justin DiLibero | [Home department](#home_dept) | Graduate Nursing |
| A.4. [Rationale](#Rationale)Additional Information for [new programs](#type) | Further review of the BSN to DNP with Specialization in Nurse Anesthesia program requirements will lead to an anticipated removal of CHEM 519 from the BSN to DNP with specialization in Nurse Anesthesia pre-requisites. This will streamline pre-requisite requirements, but necessitates that essential content is incorporated into the program. In addition, the Council on Accreditation, which is responsible for accrediting Nurse Anesthesia programs requires a minimum of 90 hours of pharmacology content to be incorporated into the BSN to DNP program. Currently, NURS 514 is approved as a 3-credit course. An increase in credit hours for NURS 514 will allow for the inclusion of essential chemistry concepts directly related to Anesthesia pharmacology and will increase the pharmacology content to ensure compliance with COA regulations.This proposal intends to increase the credit hours of NURS 514 to 4 credits beginning with the transition of the class to the DNP level beginning Summer I 2023. |
| A.5. [Student impact](#student_impact) | This change will increase the credit load for the course from 3 to 4 credits; however, this change will allow the removal of NURS 519 as a pre-requisite. The overall effect will be to minimize barriers to admission and allow for the incorporation of essential chemistry concepts that are directly related to clinical concepts. |
| A.6. [Impact on other programs](#impact) | CHEM 519 will no longer be required |
| A.7. [Resource impact](#Resource) | [Faculty PT & FT](#faculty" \o "Need to hire new full-time or part-time faculty? This is where you indicate if this proposal will be affecting FLH in your department/program.):  | This change will not directly impact the resources required for the BSN to DNP with specialization in Nurse Anesthesia program. Faculty hours for NURS 514 are paid by Saint Joseph Hospital School of Nurse Anesthesia. |
|  | [Library:](#library) |  |
|  | [Technology](#technology) |  |
|  | [Facilities](#facilities): |  |
| A.8. [Semester effective](#Semester_effective) | Summer I 2023 | A.9. [Rationale if sooner than next Fall](#Semester_effective) |  |

## B. NEW OR REVISED COURSES

|  | Old ([for revisions only](#Revisions))ONLY include information that is being revised, otherwise leave blank | NewExamples are provided within some of the boxes for guidance, delete just the examples that do not apply. |
| --- | --- | --- |
| B.1. [Course prefix and number](#cours_title)  |  |  |
| B.2. Cross listing number if any |  |  |
| B.3. [Course title](#title)  |  |  |
| B.4. [Course description](#description)  |  |  |
| B.5. [Prerequisite(s)](#prereqs) |  |  |
| B.6. [Offered](#Offered) | | Spring |  |  | Spring  |
| B.7. [Contact hours](#contacthours)  |  |  |
| B.8. [Credit hours](#credits) | 3 Credits | 4 Credits |
| B.9. [Justify differences if any](#differences) | addition of foundational chemistry concepts, and increase in overall pharmacology content necessary to meet the coa requirements for 90 hours. |
| B.10. [Grading system](#grading)  | Letter grade  | Letter grade  |
| B.11. [Instructional methods](#instr_methods) | Lecture  | Lecture  |
| B.11.a [Delivery Method](#instr_methods) | On campus  | On campus  |
| B.12.[Categories](#required) | Required for program  | Required for program  |
| B.13. [How will student performance be evaluated?](#performance) | Attendance | Class participation | Exams  | Attendance | Class participation | Exams |  |
| B.14. [Redundancy with, existing courses](#competing) |  |  |
| B. 15. Other changes, if any |  |

| B.16. [Course learning outcomes](#outcomes): List each outcome in a separate row | [Professional organization standard(s)](#standards), if relevant  | [How will each outcome be measured?](#measured) |
| --- | --- | --- |
| 1. Explain foundational biochemistry concepts as they related to pharmacological agents commonly used in nurse anesthesia practice
2. Explain principles of pharmacokinetics and pharmacodynamics related to nurse anesthesia practice
3. Describe the mechanism of action of agents commonly used in nurse anesthesia practice
4. Evaluate the mechanism of drug receptor site binding and drug interactions
 | AACN (2021) Domain 1 – Knowledge for Professional Nursing Practice; AACN(2006) Essential I. Scientific underpinning for nursing practiceCOA Graduate Standards: D9, D10, D11, D 13, D14, D 24,  | Exams, Quizzes, APEX workbook assignments, and participation |
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| B.17. [Topical outline](#outline): Please do not include a full syllabus |
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| 1. Review foundational biochemistry concepts including:
	* 1. Acid-Base Equilibrium
		2. Enzymes
		3. Proteins
		4. Carbohydrates
		5. Lipids and membranes
		6. Digestion and Metabolism
		7. Glycolysis and Gluconeogenesis
		8. Citric Acid Cycle
		9. Oxidative Phosphorylation
2. Review Pharmacokinetics
3. Describe the mechanisms of pharmacokinetics and the role each plays in determining drug movement between body tissues.
4. Discuss the factors affecting absorption of drugs.
5. Describe the impact of the pKa on drugs.
6. Explain the differences between phase I and phase II metabolism
7. Interpret the First-pass effect.
8. Differentiate First order and Zero order kinetics
9. Pharmacokinetics and pharmacodynamics of inhalation agents. APEX Pharmacodynamics Workbook assignment submitted.
10. Discuss the factors controlling uptake, distribution, and elimination of inhaled anesthetics.
11. Determine the interventions that may offset the impact of uptake.
12. Explain MAC and the factors affecting MAC.
13. Examine the possible mechanisms of action of the inhaled anesthetics
14. Inhalation Anesthetics  [Quiz I- APEX Pharmacokintics & Pharmacodynamics-password protected]
15. Compare the relationship between chemical structure and agent characteristics.
16. Describe contraindications to the use of nitrous oxide.
17. Analyze the influence of inhalation agents on organs and systems.
18. Intravenous Induction Agents
19. Examine the chemical structure and activity of specific induction agents.
20. Differentiate the clinical use and implications of each induction agent.
21. Exam I (1 hour) Simulation to follow at 10 AM
22. Benzodiazepines
23. Differentiate the clinical use and implications of each benzodiazepine.
24. Discuss the reversal agent and its use.
25. Opioid Agonists and Antagonists
26. Describe the pharmacokinetics and pharmacodynamics for opioid agonists, agonist-antagonists and opioid antagonists.
27. Summarize the clinical uses and the most common side effects of various medications in this category.
28. Nonopioid Analgesics  [Quiz 2-APEX Opioid Agonists & Antagonists-password protected]
29. Examine the properties of nonsteroidal analgesics and their use in the perioperative period.
30. Illustrate the clinical uses of centrally acting alpha 2 agonists.
31. Local Anesthetics
32. Associate the mechanism of action of local anesthetics with the pharmacokinetics and pharmacodynamics.
33. Explain principles for the safe administration of local anesthetic drugs.
34. Compose strategies for preventing and managing local anesthetic toxicity.
35. Contrast amino-amide with amino-ester local anesthetics.
36. Exam II (1 hour), Simulation to follow at 10 AM
37. Neuromuscular blocking agents
38. Differentiate depolarizing and nondepolarizing agents.
39. Compose a plan for monitoring the effects of the neuromuscular blocker during various phases of surgery.
40. Anticholinergics and Anticholinesterases
41. Describe the anticholinergic agents used in anesthesia.
42. Explain the clinical manifestations of muscarinic receptor blockade.
43. Differentiate the clinical indications of each of the anticholinesterases.
44. Explain the dosing regimens and combinations with anticholinergics used in the reversal of neuromuscular blockade.
45. Alpha and Beta agonists and antagonists in anesthesia [Quiz 3-APEX Neuromuscular Blockers-password protected]
46. Examine the synthesis, storage, effects and metabolism of endogenous catecholamines in the human body.
47. Predict the clinical effects of agonists and antagonists.
48. Malignant Hyperthermia
49. Describe the clinical signs and symptoms of malignant hyperthermia and identify the triggering agents.
50. Examine the pathophysiology, cellular events, and metabolic abnormalities associated with malignant hyperthermia.
51. Construct a treatment protocol including the preparation and administration of dantrolene.
52. Compose an anesthetic plan and describe the preparation of an anesthetic gas machine for a patient with known malignant hyperthermia susceptibility.

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## D. Signatures

##### D.1. Approvals:

##### Required from department chairs, program directors, and deans from the academic unit originating the proposal.

| Name | Position/affiliation | [Signature](#_Signature" \o "Insert electronic signature, if available, in this column) | Date |
| --- | --- | --- | --- |
| Justin DiLibero | Program Director of DNP Program | Justin DiLibero | 3/2/2022 |
| Justin DiLibero | Chair of Graduate Nursing | Justin DiLibero | 3/2/2022 |
| Carolynn Masters | Dean of School of Nursing | Carolynn Masters | 3/2/22 |

##### D.2. [Acknowledgements](#acknowledge):

##### Required from all departments (and corresponding dean) impacted by the proposal. Signature does not indicate approval. Concerns should be brought to the attention of the graduate committee chair for discussion.

| Name | Position/affiliation | [Signature](#Signature_2) | Date |
| --- | --- | --- | --- |
| Sarah Knowlton | Chair of Physical Sciences Department | Sarah Knowlton | 3/15/22 |
| Earl Simson  | Dean of Arts and Sciences | **Earl Simson** | 03/17/22 |
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