

# graduate COMMITTEE curriculum PROPOSAL FORM

## A. Cover page (rover over text for more instructions- please delete red instructions)

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| A.1[. Course or program](#_acknowledge) | **NURS 535 Advanced Physiology I** |  |
| [Replacing](#Ifapplicable)  | BIOL 535 Advanced Physiology I |  |
| Academic Unit | | School of Nursing |  |  |
| A.2. [Proposal type](#type) | Course: creation |   |  |
| A.3. [Originator](#Originator) | Justin DiLibero | [Home department](#home_dept) | Graduate Nursing |
| A.4. [Rationale](#Rationale)Additional Information for [new programs](#type) | BIOL 535 and BIOL 536 have historically been provided by the biology department; however, no biology faculty was available to teach the course in Spring of 2023. This necessitated the identification of an alternative faculty to teach the course. While biology faculty are expert in the field of physiology, they lack the clinical expertise of the anesthesia field necessary to help students draw connections between academic concepts and clinical practice. Best pedagogical strategies in nursing education require the bridging of theory and lecture concepts in clinical practice, and clinical knowledge and experiences into didactic courses (Benner, et al., 2010). Feedback from students has consistently reflected an opportunity to better integrate clinical knowledge and concepts into BIOL 535 and 536. With the change of the nurse anesthesia program to the doctoral level the its demands are higher than ever before. It is essential that the curriculum is designed to efficiently provide students a strong command of foundational concepts and the ability to easily translate this knowledge into practice. The purpose of this proposal is to move the advanced Physiology courses from Biology to Nursing. This change was brought about by trying to collaboratively solve staffing of the courses by both nursing and the Chair of Biology. Moving the courses to the nursing department allows the courses to be taught by faculty who are experienced clinicians, hold a deep knowledge of physiology and pathophysiology, and can better facilitate student’s ability to bridge connections between didactic content and clinical practice.ReferenceBenner, P Sutphen, M., Leonard, V., Day, L. (2010). *Educating nurses: A call for radical transformation.* Jossey-Bass.  |
| A.5. [Student impact](#student_impact) | This model will continue to provide students with advanced knowledge of physiology while better supporting students to bridge connections between didactic knowledge and clinical practice.  |
| A.6. [Impact on other programs](#impact) | Historically, these courses have been taught by faculty in the Biology department. The courses are available to students in the nurse anesthesia program only. In the Spring of 2023 no biology faculty was available to teach this course. This change is not expected to have a significant impact on other departments or programs.  |
| 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.):  | As above. |
|  | [Library:](#library) | None |
|  | [Technology](#technology) | None |
|  | [Facilities](#facilities): | None |
| A.8. [Semester effective](#Semester_effective) | Spring 2023 | A.9. [Rationale if sooner than next Fall](#Semester_effective) | No biology faculty is available to teach the course in Spring of 2023. |
| A.10 [Changes to the website](#Signature_2) | Catalog changes only |

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| A.10. INSTRUCTIONS FOR CATALOG COPY: This single file copy must include all relevant pages from the college catalog, and show how the catalog will be revised. (1) Go to the “Forms and Information” on the graduate committee’s website <https://www.ric.edu/department-directory/graduate-curriculum-committee/forms-and-information>Scroll down until you see the Word files for the current catalog. (2) Download ALL catalog sections relevant for this proposal, including course descriptions and/or other affected programs. (3) Place ALL relevant catalog copy into a single file. Put page breaks between sections and delete any catalog pages not relevant for this proposal. (4) Using the track changes function, revise the catalog pages to demonstrate what the information should look like in next year’s catalog. (5) Check the revised catalog pages against the proposal, making sure that program totals are correct when adding or deleting course credits. |

## 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)  |  | NURS 535 |
| B.2. Cross listing number if any |  | None |
| B.3. [Course title](#title)  |  | Advanced Physiology I |
| B.4. [Course description](#description)  |  | Examination of human physiology. This course will utilize a systems approach to the topics of cellular, neurologic, cardiovascular, and respiratory physiology. |
| B.5. [Prerequisite(s)](#prereqs) |  | Enrollment in the Nurse Anesthesia option or permission of DNP Program Director |
| B.6. [Offered](#Offered) |  | Fall |
| B.7. [Contact hours](#contacthours)  |  |  |
| B.8. [Credit hours](#credits) |  | 4 credit hours  |
| B.9. [Justify differences if any](#differences) |  |
| B.10. [Grading system](#grading)  |  | Letter grade |  |
| B.11. [Instructional methods](#instr_methods) |  | | Lecture |  |
| B.11.a [Delivery Method](#instr_methods) |  | |Hybrid |
| B.12.[Categories](#required) |  | Required for program |  |
| B.13. [How will student performance be evaluated?](#performance) | Attendance | Class participation | Clinical work | Exams | Fieldwork | Presentations | Papers | Class Work | Interviews | Quizzes |Performance Protocols | Projects | | Reports of outside supervisor | Studio work | Attendance | Class participation | | Exams | Presentations | Papers |  |
| 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. Evaluate select biochemical, genetic and cellular mechanisms that lead to health alterations across the lifespan
2. Analyze the relationship between structure and function at the cellular and tissue levels related to the neurologic, cardiac, skeletomuscular, and renal systems
3. Evaluate physiologic principles and relationship necessary for the maintenance of homeostasis
4. Discuss the relationship of fundamental physiologic concepts to nurse anesthesia practice

  | Council on Accreditation (2014). *Standards for Accreditation of Nurse Anesthesia Programs: Practice Doctorate.* COA**Standard E2.1 – Course** requirement: Advanced Physiology/Pathophysiology, Advanced Pharmacology, Basic and Advanced Principles in Nurse Anesthesia, and Advanced Health Assessment *(see Glossary, “Advanced health assessment”)*. **Standard E2.2 - Content:** Advanced Physiology/Pathophysiology (120 contact hours), advanced pharmacology (90 contact hours), basic and advanced principles in nurse anesthesia (120 contact hours), research (75 contact hours), advanced health assessment (45 contact hours), human anatomy, chemistry, biochemistry, physics, genetics, acute and chronic pain management, radiology, ultrasound, anesthesia equipment, professional role development, wellness and substance use disorder, informatics, ethical and multicultural healthcare, leadership and management, business of anesthesia/practice management, health policy, healthcare finance, integration/clinical correlation *(see Glossary, “Wellness and substance use disorder,” “Pain management, acute,” “Pain management, chronic,” "Professional role development," and “Radiology”).*  | 1. Exams/Presentations
2. Exams/Presentations
3. Exams/Presentations
4. Exams/Presentations
 |

| B.17. [Topical outline](#outline): Please do not include a full syllabus |
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| 1. Cellular Physiology
	1. Volume and composition of body fluids
	2. Characteristics of cell membranes
	3. Transport mechanisms
	4. Resting membrane potential
	5. Action potentials
	6. Synaptic and neuromuscular transmission
	7. Neuromuscular transition
	8. Excitation and contraction of smooth muscle
	9. Motor control, Energetics

and smooth muscle* 1. Excitation and contraction of smooth muscle
	2. Motor control, Energetics

and smooth muscle |
| 1. Autonomic Nervous system
	1. Features of the autonomic nervous system
	2. Autonomic receptors
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| 1. Cardiac system
	1. Overview of the cardiovascular system
	2. Hemodynamics
	3. Cardiac electrophysiology
	4. Cardiac muscle contraction
	5. Cardiac cycle
	6. Relationships between cardiac output and venous return
	7. Regulation of arterial pressure
	8. Microcirculation
	9. Special circulation
	10. Temperature regulation

Integrative cardiovascular function**Cardiac Electrophysiology**1. Principles of Electrocardiography
	1. ECG Characteristics
	2. ECG leads
	3. Principles of vectoral analysis
	4. Abnormal voltages of QRS Complex
	5. Prolonged and Bizarre QRS Complex
	6. Current of Injury
	7. T-wave abnormalities
2. Cardiac Arrhythmias
	1. Tachycardia
	2. Bradycardia
	3. Sinus arrhythmia
	4. Premature Atrial contractions
	5. Atrial fibrillation
	6. Atrial flutter
	7. Junctional rhythms
	8. Idioventricular rhythm
	9. Ventricular tachycardia
	10. Ventricular fibrillation
	11. AV Blocks
	12. Bundle Branch blocks
	13. Re-entry tachycardias
 |
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	8. Idioventricular rhythm
	9. Ventricular tachycardia
	10. Ventricular fibrillation
	11. AV Blocks
	12. Bundle Branch blocks
	13. Re-entry tachycardias
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| 1. Cardiac Failure
	1. Circulatory dynamics
	2. Cardiogenic shock
	3. Edema
	4. Cardiac reserve
2. Valvular and congenital heart defects
	1. Heart sounds
	2. Abnormal circulatory dynamics in valvular heart disease
	3. Abnormal circulatory dynamics in congenital heart defects
	4. Use of extracorporeal circulation during cardiac surgery
3. Circulatory shock
	1. Cardiogenic Shock
	2. Hypovolemic Shock
	3. Neurogenic Shock
	4. Anaphylactic Shock
	5. Septic Shock
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| 1. Renal Physiology
	1. Anatomy and blood supply
	2. Body fluids
	3. Renal Clearance
	4. Renal blood flow
	5. Glomerular filtration
	6. Reabsorption and secretion
	7. Sodium balance
2. Acid/Base
	1. pH of Body Fluids
	2. acid production in the body
	3. Buffering
	4. Renal mechanisms in Acid-Base balance
	5. Acid-Base disorders
3. Kidney Disease
	1. Phosphate, calcium and magnesium balance
	2. Water balance
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## C. [Program Proposals](#program_proposals)

## 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 |
| --- | --- | --- | --- |
| Kara Misto | Program Director of DNP | Text, letter  Description automatically generated | 11/3/22 |
| Justin DiLibero | Chair of Graduate Nursing | Justin DiLibero | 11/1/2022 |
| Carolynn Masters | Dean of Nursing  |  | 11/17/22 |

##### 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 |
| --- | --- | --- | --- |
| Dana Kolibachuk | Chair of Biology | Dana J Kolibachuk | 11/18/2022 |
| Earl Simson | Dean FAS | Earl Simson | 1/31/23 |
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