USC Social Work
Department of Nursing

NURS 500
Section #69011D

Bridge Course
2 Units

Fall 2016

Instructor: Gioia Polidori, Ph.D.
E-mail: gpolidor@usc.edu
Telephone: 213-740-3337
Office: AHF 253
Office Hours: xxx

Course Days: Monday
Course Time: 2-4 pm
Course Location VAC

I. Course Prerequisites or Corequisites

This course will provide the necessary scientific content basis for the graduate Pathophysiology and Pharmacology courses. Specifically, this course will provide a working knowledge of chemistry, biochemistry, cell biology, metabolism, genetics, microbiology, and immunology at the undergraduate level, situated within the context of clinical diseases and conditions.

II. Catalogue Description

The bridge course covers key concepts from chemistry, biochemistry, genetics, cell biology, metabolism, microbiology, and immunology in an 8-week format. Successful completion of this unique preparatory course is expected to position students for success in the graduate-level Pathophysiology and Pharmacology courses.

III. Course Description

The bridge course will concisely cover critical topics within these domains: chemistry, biochemistry, genetics, cell biology, metabolism, microbiology, and immunology, as listed in the detailed topic listing. The concepts covered are foundational to an understanding of graduate level pathophysiology and pharmacology, and are presented in the context of their relationship to advanced clinical practice.

IV. Course Objectives

At the end of this course, the student should be able to:

Objective No.	Objectives
1	Identify basic principles and properties of atoms, molecules, and bonding, including chemistry of acids and bases, with applications to human biology.
2	Describe the interaction between structure and function of biological molecules discussed in the graduate science courses, including nucleic acids and the molecular basis of genetics.
3	Explain basic concepts of cell structure and function, cellular communication, and the life cycle of cells.
4	Identify the core principles of human genetics and their relationship to clinical genetic testing.
5	Trace the major pathways of biological metabolic processes.
6	Identify major microbiological pathogens and their pathogenic properties.
7	Describe the fundamental properties of immune system function in protection from pathogens.

V. Course Format/Instructional Methods

The bridge course will consist of lectures delivered asynchronously, with problem-solving sessions delivered synchronously. Online discussion forums will permit students to obtain peer- and instructor-provided guidance.

VI. Student Learning Outcomes

Student learning for this course relates to one or more of the following nine nursing core competencies:

Nursing Core Competencies		NURS 500	Course Objective
1	Scientific Foundation Competencies	*	1-7
2	Leadership		
3	Quality		
4	Practice Inquiry		
5	Technology and Information Literacy		
6	Policy		
7	Health Delivery System		
8	Ethics		
9	Independent Practice		

*Highlighted in this course

The following table explains the highlighted competencies for this course, the related student learning outcomes, and the method of assessment.

SCIENTIFIC FOUNDATION COMPETENCIES		
Competencies/Knowledge, Values, Skills	**Student Learning Outcomes**	**Method of Assessment**
Family Nurse Practitioner competent in Scientific Foundation Competencies: ▪ Integrates scientific findings from nursing, biopsychosocial fields, genetics, public health, quality improvement, and organizational sciences for the continual improvement of nursing care across diverse settings	Critically analyzes data and evidence for improving advanced nursing practice. Integrates knowledge from the humanities and sciences within the context of nursing science. Translates research and other forms of knowledge to improve practice processes and outcomes. Develops new practice approaches based on the integration of research, theory, and practice knowledge.	Exams

VII. Course Assignments, Due Dates, and Grading

Assignment	Due Date	% of Final Grade
Exam 1	Week 3	25%
Exam 2	Week 6	35%
Exam 3	Week 9	35%
Class Participation	Ongoing	5%

Each of the major assignments is described below.

Exams (95% of course grade)

Three objective, online tests will be used to assess student attainment of the learning objectives. Students will be given three exams during Weeks 3, 6, and 8. Exam 1 will be based on content material from Weeks 1 through 2. Exam 2 will be based on content from Weeks 3 through 5. Exam 3 will be based on content from Weeks 6 through 8.

Due: Weeks 3, 6, and 9.

This assignment relates to Student Learning Outcome 1.

Class Participation (5% of course grade)

Students' active involvement in the class is considered essential to their growth as practitioners. Their presence in class, along with preparation by having read and considered the assignments and participation in discussion and activities are essential. Class participation is based on participation in online and in class discussions. Class participation is mandatory; if a student anticipates missing a class or is ill they will need to notify the instructor as soon as possible.

Class grades will be based on the following:

This course is graded Pass/No Pass. You will earn a passing grade if your total score for the class is at least 80% of the possible points from participation and exams scores.

VIII. Required and Supplementary Instructional Materials and Resources

Required Textbooks:

A custom textbook from Pearson Publishing will be assembled to the instructions of the course faculty.

Paperback version is available for purchase through the USC bookstore: http://www.uscbookstore.com
Titled: Pearson NURS 500 Collection (CUSTOM)

E-text is available directly through the Pearson website:
https://collections.pearsoned.com/#purchaseebook/1269499610

The sources of the chapters shown below are from the following textbooks:

Marieb, E. N., & Hoehn, K. (2009). *Human anatomy and physiology* (8th ed.). Boston, MA:

Pearson.

Tortora, G. J., Funke, B. R., & Case, C. L. (2016). *Microbiology, an introduction* (12th ed.) Boston, MA: Pearson.

Recommended Guidebook for APA Formatting:

American Psychological Association. (2009). *Publication Mmanual of the American Psychological Association* (6th ed.). Washington, D.C.: American Psychological Association.

Note: Additional required and recommended readings may be assigned by the instructor throughout the course.

Course Overview

Week	Content	Assignments
1	**Module 1: General Chemistry** • Matter, bonding, and molecules • Solutions • Osmotic equilibrium • Acid/base equilibrium	

2	**Module 2: Cell Biology** • Prokaryotic and eukaryotic cell structure • Biomolecule structure and function • Cell communication • Membrane signaling mechanisms	
3	**Module 3: Cell Division and Nucleic Acid Function** • Mitosis and meiosis • Chromosome structure and function • Gene function and protein synthesis	**Exam 1**
4	**Module 4: Biotechnology and Human Genetics** • Human genetics • Biotechnology	
5	**Module 5: Metabolism** • Biomolecules of metabolism • Catabolic pathways • Anabolic pathways • Vitamins	
6	**Module 6: Microbiology, Part 1** • Structure and function of bacteria • Identification of pathogenic bacteria • Mechanisms of bacterial pathogenesis	**Exam 2**
7	**Module 7: Microbiology, Part 2** • Structure and function of viruses • Structure and function of yeast and molds	
8	**Module 8: Immunology: Our Body's Defense System** • Cells and molecules of the immune system • Innate immunity • Adaptive immunity	
9	**Final exam**	**Exam 3**
Study Days / No Classes		
Final Examinations		

Course Schedule—Detailed Description

Module 1: General Chemistry	**Month Date**
Topics	
• Matter, bonding, and molecules • Solutions Electrolyte imbalance • Osmotic equilibrium Acidosis Oxygen-hemoglobin binding	

This module relates to Course Objective 1.

Required Readings

Marieb, E. N., & Hoehn, K. (2009). *Human anatomy and physiology* (8th ed.). Boston, MA: Pearson.

1. Chapter 1: Chemistry comes alive, pp. 1-38.

Module 2: Cell Biology	Month Date
Topics	
• Prokaryotic and eukaryotic cell structure Burn patient Lysosomal storage disease • Biomolecule structure and function Sickle cell anemia Hereditary spherocytosis • Cell communication • Membrane signaling mechanisms	

This module relates to Course Objectives 2 and 3.

Required Readings

Marieb, E. N., & Hoehn, K. (2009). *Human anatomy and physiology* (8th ed.). Boston, MA: Pearson.

1. Chapter 2: Cells: The living units, pp. 39-96.

Module 3: Cell Division and Nucleic Acid Function	Month Date
Topics	
• Mitosis and meiosis Cancer • Chromosome structure and function • Gene structure and protein synthesis Cystic fibrosis	

This module relates to Course Objectives 2, 3, 4.

Required Readings

Marieb, E. N., & Hoehn, K. (2009). *Human anatomy and physiology* (8th ed.). Boston, MA: Pearson.

1. Review Chapter 2: Cells: The living units, pp. 39-96.
2. Chapter 4: Heredity, pp. 147-162.

Module 4: Biotechnology and Human Genetics	Month Date
Topics	
• Human genetics Sources of genetic variation Patterns of inheritance Pharmacogenomics Huntington disease • Biotechnology Laboratory methods in genetics and genomics	

This module relates to Course Objectives 3 and 4.

Required Readings

Tortora, G. J., Funke, B. R., & Case, C. L. (2016). *Microbiology: An introduction* (12th ed.) Boston, MA: Pearson.

1. Chapter 5: Biotechnology and DNA technology, pp. 163-190.

Marieb, E. N., & Hoehn, K. (2009). *Human anatomy and physiology* (8th ed.). Boston, MA: Pearson.

1. Review Chapter 4: Heredity, pp. 147-162.

Module 5: Metabolism	Month Date
Topics	
• Biomolecules of metabolism • Catabolic pathways Shock and lactic acidosis Cyanide and metabolic uncouplers Diabetic ketoacidosis Stress • Anabolic pathways Obesity	

This module relates to Course Objectives 2 and 5.

Required Readings

Marieb, E. N., & Hoehn, K. (2009). *Human anatomy and physiology* (8th ed.). Boston, MA: Pearson.

1. Chapter 3: Nutrition, metabolism, and body temperature regulation, pp. 97-146.

Module 6: Microbiology, Part 1	Month Date
Topics	
• Structure and function of bacteria • Identification of pathogenic bacteria • Mechanisms of bacterial pathogenesis Infectious diarrhea Antibiotic resistance	

This module relates to Course Objective 6.

Required Readings

Tortora, G. J., Funke, B. R., & Case, C. L. (2016). *Microbiology: An introduction* (12th ed.) Boston, MA: Pearson.

1. Chapter 6: The prokaryotes: Domains bacteria and archaea, pp. 191-222.
2. Chapter 9: Principles of disease and epidemiology, pp. 297-326.
3. Chapter 10: Microbial mechanisms of pathogenicity, pp. 327-350.

Module 7: Microbiology, Part 2	Month Date
Topics	
• Structure and function of viruses Cancer Vaccines • Structure and function of yeast and molds	

This module relates to Course Objective 6.

Required Readings

Tortora, G. J., Funke, B. R., & Case, C. L. (2016). *Microbiology: An introduction* (12th ed.) Boston, MA: Pearson.

1. Chapter 7: Eukaryotes: Fungi, algae, protozoa and helminths, pp. 223-262.
2. Chapter 8: Viruses, viroids, and prions, pp. 263-296.

3. Review Chapter 9: Principles of disease and epidemiology, pp. 297-326.
4. Review Chapter 10: Microbial mechanisms of pathogenicity, pp. 327-350.

Module 8: Immunology	Month Date
Topics	
• Cells and molecules of the immune system • Innate immunity Acute inflammation • Adaptive immunity Monoclonal antibodies	

This module relates to Course Objective 7.

Required Readings

Tortora, G. J., Funke, B. R., & Case, C. L. (2016). *Microbiology: An introduction* (12th ed.) Boston, MA: Pearson.

1. Chapter 11: Innate immunity: Nonspecific defenses of the host, pp. 351-380.
2. Chapter 12: Adaptive immunity: Specific defenses of the host, pp. 381-406.

Study Days / No Classes	Month Date

Final Examinations	Month Date

University Policies and Guidelines

IX. Attendance Policy

Students are expected to attend every class and to remain in class for the duration of the module. Failure to attend class or arriving late may impact your ability to achieve course objectives which could affect your course grade. Students are expected to notify the instructor by email (gpolidor@usc.edu) of any anticipated absence or reason for tardiness.

University of Southern California policy permits students to be excused from class for the observance of religious holy days. This policy also covers scheduled final examinations which conflict with students' observance of a holy day. Students must make arrangements *in advance* to complete class work which will be missed, or to reschedule an examination, due to holy days observance.

Please refer to *Scampus* and to the USC School of Social Work Student Handbook and the Department of Nursing Student Handbook for additional information on attendance policies.

X. Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct/.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* http://equity.usc.edu/ or to the *Department of Public Safety*

http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us. This is important for the safety whole USC commModuley. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* http://www.usc.edu/student-affairs/cwm/ provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

Confidentiality of material shared in class will be maintained. As class discussion is an integral part of the learning process, students are expected to come to class ready to discuss required reading and its application to theory and practice.

XI. Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* http://emergency.usc.edu/ will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

XII. Statement about Incompletes

The Grade of Incomplete (IN) can be assigned only if there is work not completed because of a documented illness or some other emergency occurring after the 12th week of the semester. Students must NOT assume that the instructor will agree to the grade of IN. Removal of the grade of IN must be instituted by the student and agreed to be the instructor and reported on the official "Incomplete Completion Form."

XIII. Policy on Late or Make-up Work

Assignments are due on the day and time specified. Extensions will be granted only for extenuating circumstances. If the assignment is late without permission, the grade will be affected.

XIV. Policy on Changes to the Syllabus and/or Course Requirements

It may be necessary to make some adjustments in the syllabus during the semester in order to respond to unforeseen or extenuating circumstances. Adjustments that are made will be communicated to students both verbally and in writing.

XV. Code of Ethics for Nurses

Ethics is an integral part of the foundation of nursing. Nursing has a distinguished history of concern for the welfare of the sick, injured, and vulnerable and for social justice. This concern is embodied in the provision of nursing care to individuals and the community. Nursing encompasses the prevention of illness, the alleviation of suffering, and the protection, promotion, and restoration of health in the care of individuals, families, groups, and communities. Nurses act to change those aspects of social structures that detract from health and well-being. Individuals who become nurses are expected not only to adhere to the ideals and moral norms of the profession but also to embrace them as a part of what it means to be a nurse. The ethical tradition of nursing is self-reflective, enduring, and distinctive. A code of ethics makes explicit the primary goals, values, and obligations of the profession.

The Code of Ethics for Nurses serves the following purposes:

- It is a succinct statement of the ethical obligations and duties of every individual who enters the nursing profession.
- It is the profession's nonnegotiable ethical standard.
- It is an expression of nursing's own understanding of its commitment to society.

There are numerous approaches for addressing ethics; these include adopting or subscribing to ethical theories, including humanist, feminist, and social ethics, adhering to ethical principles, and cultivating virtues. The Code of Ethics for Nurses reflects all of these approaches. The words "ethical" and "moral" are used throughout the Code of Ethics. "Ethical" is used to refer to reasons for decisions about how one ought to act, using the above mentioned approaches. In general, the word "moral" overlaps with "ethical" but is more aligned with personal belief and cultural values. Statements that describe activities and attributes of nurses in this Code of Ethics are to be understood as normative or prescriptive statements expressing expectations of ethical behavior.

The Code of Ethics for Nurses uses the term *patient* to refer to recipients of nursing care. The derivation of this word refers to "one who suffers," reflecting a universal aspect of human existence. Nonetheless, it is recognized that nurses also provide services to those seeking health as well as those responding to illness, to students and to staff, in healthcare facilities as well as in communities. Similarly, the term practice refers to the actions of the nurse in whatever role the nurse fulfills, including direct patient care provider, educator, administrator, researcher, policy developer, or other. Thus, the values and obligations expressed in this Code of Ethics apply to nurses in all roles and settings.

The Code of Ethics for Nurses is a dynamic document. As nursing and its social context change, changes to the Code of Ethics are also necessary. The Code of Ethics consists of two components: the provisions and the accompanying interpretive statements. There are nine provisions. The first three describe the most fundamental values and commitments of the nurse; the next three address boundaries of duty and loyalty, and the last three address aspects of duties beyond individual patient encounters. For each provision, there are interpretive statements that provide greater specificity for practice and are responsive to the contemporary context of nursing. Consequently, the interpretive statements are subject to more frequent revision than are the provisions. Additional ethical guidance and detail can be found in ANA or constituent member association position statements that address clinical, research, administrative, educational, or public policy issues.

Code of Ethics for Nurses with Interpretive Statements provides a framework for nurses to use in ethical analysis and decision-making. The Code of Ethics establishes the ethical standard for the profession. It is not negotiable in any setting nor is it subject to revision or amendment except by formal process of the House of Delegates of the ANA. The Code of Ethics for Nurses is a reflection of the proud ethical heritage of nursing, a guide for nurses now and in the future.

XVI. Complaints

If you have a complaint or concern about the course or the instructor, please discuss it first with the instructor. If you feel you cannot discuss it or resolve it with the instructor, please follow the process outlined in the Department of Nursing Student Handbook.

Don't procrastinate or postpone working on assignments.