

Fall Term – 2015
30:725:320 – Introduction to Pharmaceutical Care (4 credits)

Course Coordinator: Professor John L. Colaizzi, B.Pharm., Ph.D., R.Ph.
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Office: 414 William Levine Pharmacy Building (4th Floor)
Office Hours: Monday – 2:30 to 4:00 p.m.; Tuesday - 8:00 to 11 a.m. and 2:00 to 4:00 p.m.;
Wednesday - 8:00 to 11:30 a.m.; Thursday - 2:30 to 4 p.m.; Friday – 8 to 11.
(Other times, by prior appointment, **but it's always best to Email ahead to set up a specific time for an appointment!!!**)

Teaching Assistants: Dr. Andriy Kuzmov, Pharm.D., Ph.D. candidate Mr. Justin Sapiezynski, B.S., Ph.D. candidate
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Course Schedule: Monday and Thursday, 12 noon to 1:25 p.m., ARC 103 Friday, 2:00 p.m. to 2:55 p.m., ARC 103

Ability Based Outcomes (ABOs): After successfully completing this course, the First Professional Year [P-1] pharmacy student will have achieved following useful skills and valuable competencies:

1. To confidently, clearly and authoritatively explain the concept and the historical development of **patient-centered pharmaceutical care** as the main role of the profession; and to be prepared to provide patient-centered care to patients at a basic level under proper supervision of a qualified preceptor; and to be prepared to assume the role of pharmacists as the medication expert on the health care delivery team in the current dynamic health care environment.

2. To convincingly explain the purpose and value of a pharmacist-developed, patient-specific and **evidence-based pharmaceutical care plan** to patients and to other healthcare providers, and to health care administrators and payers, and to be able to design, implement monitor, and evaluate such a plan for the major categories of drugs.

3. To demonstrate a thorough and fluency with relevant medical and **pharmaceutical terminology, acronyms, and nomenclature** associated with the modern practice of pharmacy in all of the various venues in which it occurs, and especially when working in collaboration with physicians, nurses and other healthcare professionals.

4. To be comfortably conversant with the specific nomenclature that is common to **the major classes of drugs**, and to be able to explain the **chemical, pharmacologic, and therapeutic categories** of important drugs, and to have an introductory-level working familiarity with the **indications, doses, contraindications, and potential side effects** for the representative set of drugs and drug classes used to illustrate the range of concepts essential to the delivery of modern, patient-centered pharmaceutical care.

5. To recognize the **symptoms and risk factors** associated with the major disease categories for which the representative drug classes illustrated in this course are indicated.

6. To identify and prevent **pharmacotherapeutic duplications** and harmful **drug-drug interactions** as illustrated by the representative therapeutic categories of the drugs that are discussed in this course.

7. To explain to patients, health care providers or administrators the technical, regulatory and practical differences among **brand name drugs** and their **generic equivalents** and **biosimilar drugs (follow-on biologics)**, and the importance of these concepts in the management of medication use systems; and to be able to advise patients and providers regarding **generic and therapeutic interchange** of drugs.

8. To select optimal dosage forms for various drugs for the **gastrointestinal, parenteral or topical routes** of administration, and to select **immediate-release or controlled release** dosage form options, and to be able to explain the influence of these factors on drug **dose, onset, duration, efficacy and toxicity**. To responsibly convert patients from parenteral to oral medications.

9. To recognize, prevent or resolve the **seven** different types of **pharmacotherapy problems** that have the potential to harm patients or to detract from their quality of care.

10. To choose **therapeutic alternatives** based on cost-savings considerations or improved efficacy or toxicity profiles.

11. To evaluate and review **prescriptions** and **medication orders** for optimal **drug, dose, or duration** of treatment.

12. To deal with the basic legal and regulatory aspects of **Rx-only drugs, controlled substance drugs, and OTC products**.

13. To conduct **prospective and retrospective drug utilization review** and **patient counseling** especially for the representative drugs and drug categories presented in this course.

14. To intelligently discuss and demonstrate an awareness of key **current issues** and controversies affecting health care and health care policy generally and the profession of pharmacy more specifically.

15. To exhibit a sense of **ethical awareness, professionalism** and pride in the profession of pharmacy, and to develop an ability to serve as an **advocate** and a **leader** for the profession.

16. To enhance your qualifications and **competitiveness** for part-time (and eventually full-time) **employment opportunities** in pharmacy while you are in the professional program, and to gain a meaningful understanding of the major career options available to pharmacists in both **practitioner and non-practitioner roles**, and how to best prepare for success in these various career options.

Weekly Exams: There are 13 “weekly exams.” These exams will cover all information discussed or assigned in class or on the handouts that are distributed in class, unless otherwise announced in class. The weekly exams will include all material covered during the lectures as well as the previously covered medical terminology handout (s). Most of the questions on the exams will come from the information presented and assigned since the previous exam, but there will be an occasional question dealing with concepts that were covered on previous exams. Therefore, it’s a good idea to review your previously taken exam. Weekly exams may be picked up from Mrs. Weinstein on the 4th floor of the pharmacy building usually by midweek following the Friday on which the exam was given. (room 410 or 414) . Have student ID available. Please note that it is **simply impossible** to accommodate requests for make-up exams. It is strongly recommended that you not miss any of the weekly exams, because they are designed to be **excellent learning experiences** and a good way to gauge your mastery of the important concepts and information presented in the course. We sincerely regret that exams cannot be given early, and that we are simply not in a position to administer make-up exams. There are 13 weekly exams, but only the top 12 exam grades will be used in calculating your final course average. If you miss one exam, that is the one that will not be calculated in your grade. All exams in this course are closed-book. No electronic devices of any kind are permitted during exams.

Course Policies and Requirements: Because of the large number of students in the class, the following standards of **classroom civility and courtesy** will be adhered to in the interest of maintaining a high quality learning environment for all students. **No extended conversations; no ostensible texting or reading of newspapers or smart phones; no hoarding of handouts; no sleeping.** Questions and comments are always welcome, highly valued, and definitely encouraged during, before, or after class, **but especially during class.** **Violations of academic integrity during exams cannot be tolerated.**

Friday Class Sessions: Exams will be administered during the last 25 minutes of class. When coming to the Friday sessions, please observe the following procedures to facilitate the administration of the exams, and to allow maximum time for the taking of the exams, which are multiple-choice, unless announced otherwise (have a #2 pencil!):

1. You must be seated **every other seat.** *The instructors reserve the right to assign any student to a specific seat before or during an exam* Please be seated **every other seat at the beginning of Friday classes**, so that the distribution of the exams may be completed as quickly as possible, allowing you to have as much time as possible for taking the exam.

2. Please place all books, notes, and electronic devices out of sight once the distribution of the exams has begun.

Calculation of Final Grade:

Average of the top 12 weekly exam grades: **75%**

Final Exam (cumulative): **25 %**

(89% to 100% =A; 84% to 89% = B+; 79% to 84% =B; 74% to 79% =C+; 69% to 74% = C; 59% to 69% = D; below 59% = F)

New Jersey Board of Pharmacy definition of Pharmaceutical Care: “*The provision by a pharmacist of drug therapy review and other related patient care services intended to achieve positive outcomes related to the treatment, cure or prevention of a disease; control, elimination or reduction of a patient’s symptoms; or arresting or slowing of a disease process as defined by the rules and regulations of the Board.*”

A Few Suggested References:

1. “A Practical Guide to Pharmaceutical Care – A Clinical Skills Primer,” J.Rovers & J.Currie, APhA, Washington, DC, 2007.
2. “Drug Facts and Comparisons,” (refer to www.factsandcomparisons.com) – Updated Monthly.
3. “Understanding Medical Terms: A Guide for Pharmacy Practice,” W.F. Stanazak *et al.*, 2nd edition, Economic Publishing Co., Inc., Lancaster, PA, 1998. *Alternatively, any medical dictionary may be useful.*
4. “Pharmaceutical Care,” 2nd edition, Calvin Knowlton and Richard Penna, ASHP, Bethesda, MD, 2003.
5. “Pharmaceutical Care Practice,” R.J. Cippole, L.M.Strand, and P.C.Morley, McGraw-Hill, New York, 2001.
6. “Pharmacotherapy, A Pathophysiologic Approach,” 9th Edition, Joseph T. DiPiro *et al.*, McGraw Hill Medical, New York, 2014.
7. “An Introduction to Clinical Pharmaceutics,” Alexander T. Florence, The Pharmaceutical Press, London, 2010.
8. “Introduction to the Pharmacy Profession,” A. W. Lovett *et al.*, Jones & Bartlett Learning, Burlington, MA, 2014.

SYLLABUS/CLASS SCHEDULE – 2015

Date and Day	Scheduled or anticipated lecture topic or classroom-based activity or quiz or examination
September 3 Thursday	Practice models for pharmacy; Ability based outcomes; Clinical Pharmacy and Patient Centered pharmaceutical care/clinical pharmacy; MTM; “Professionalism;” the historical transition of the profession of pharmacy from a product-centered focus to a patient-centered focus .
September 4 Friday	Introduction to Medical Terminology, pharmaceutical and medical acronyms and abbreviations. <i>Weekly Exam 1</i>
September 8 Tuesday – follow <i>Monday classes</i>	Trends in health care affecting pharmacy; pharmaceutical care and cost containment; health care reform (ACA and ACOs/Medical Homes/Shared Savings Programs); Managed Care influences specific to pharmacy; Indicators of public and governmental acceptance of the clinical/pharmaceutical care roles for pharmacists.
Sept. 10 Thursday	The principal pharmacy practice sites for prescription drug acquisition and utilization by patients; Specialty Pharmacy and REMS; the major career options for pharmacy graduates.
Sept. 11 Friday	Anatomical structures and related medical terminology <i>Weekly Exam 2</i>
Sept. 14 Monday	Medication errors and the seven classic pharmacotherapy problems; the role of genetic testing (pharmacogenomics) in individualized pharmacy and medicine.
Sept. 17 Thursday	Electronic prescribing; DUR; prescription processing; multiple approaches to drug classification and drug nomenclature.
Sep. 18 Friday	Musculoskeletal System medical terminology <i>Weekly Exam 3</i>
Sept. 21 Monday	The nomenclature of drugs (the multiple names a drug can have); the “generic” names of drugs; generic substitution; “biosimilars;” NDC numbers; bar codes; controlled release <i>vs.</i> immediate -release dosage forms; combination products
Sept. 24 Thursday	Chemical, Pharmacological, and Therapeutic categories of drugs; USAN Nomenclature; Therapeutic interchange; pharmaceutical care applications with DRONATE, FARIN/PARIN/GREL, XABAN, and SENTAN drug nomenclature.
Sept. 25 Friday	Dermatological, ophthalmic and otic medical terminology <i>Weekly Exam 4</i>
Sept. 28 Monday	FDA-approved labeling; basic drug information resources; pharmaceutical care applications for drugs with PROFEN, FENAC and COXIB nomenclature; the NSAIDs. (non-narcotic approaches to pain relief)
October 1 Thursday	Pharmaceutical care applications for drugs with MORPH, ORPH, COD, FENT, ADOL, and XONE nomenclature; and related narcotic analgesics. (treatment of severe pain)
October 2 Friday	Medical terminology: pulmonary and respiratory systems <i>Weekly Exam 5</i>
October 5 Monday	Pharmaceutical care applications for drugs with SONE, OLONE, CORT, PRED, BETASOL, SONIDE, and SOLIDE nomenclature; [the corticosteroids and their multiple applications in pharmacotherapy]
October 8 Thursday	Pharmaceutical care applications for drugs with BUTEROL, TEROL, LUKAST, TROPIUM, and INIUM nomenclature [anti-asthma drugs] [anti-COPD drugs]
October 9 Friday	The digestive system and nutrition-related medical terminology <i>Weekly Exam 6</i>

October 12 Monday	Pharmaceutical care applications for drugs with AMINE, ADINE, ASTINE, TADINE, ZINE, and TIRIZINE nomenclature [the antihistamines]; and DOPA, CAPONE, and GILINE nomenclature [the anti-Parkinson's drugs].
October 15 Thursday	Pharmaceutical care applications for drugs with TIDINE, PRAZOLE, and SETRON Nomenclature [and related OTC-Gastrointestinal/anti-acid drugs].
October 16 Friday	Medical terminology: allergy and infectious diseases. <i>Weekly Exam 7</i>
October 19 Monday	Pharmaceutical care applications for drugs with CILLIN, CEF, CEPH, and PENEM nomenclature [β -lactam antibiotics]. (Treating Infectious Disease and avoiding Antibiotic Resistance)
October 22 Thursday	Pharmaceutical care applications for drugs with SULF, CYCLINE, FLOXACIN and OXACIN nomenclature [antibiotics/anti-infectives].
October 23 Friday	Surgical terms; cells; body tissues <i>Weekly Exam 8</i>
October 26 Monday	Pharmaceutical care applications for drugs with MYCIN, MICIN and VANC Nomenclature [antibiotics].
October 29 Thursday	Pharmaceutical care applications for drugs with AZOLE, CONAZOLE, FINE and FUNGIN nomenclature [antifungal antibiotics].
October 30 Friday	Medical Terminology: Cardiovascular System <i>Weekly Exam 9</i>
November 2 Monday	Pharmaceutical care applications for drugs with VIR, CICLOVIR, CYCLOVIR, FOVIR, AMIVIR, CAVIR, PREVIR, MANTADINE, and URIDINE nomenclature.[antiviral drugs – other than antiretrovirals].
November 5 Thursday	Pharmaceutical care applications for drugs with VUDINE, CAVIR, CITABINE, FOVIR, DANOSINE, NAVIR, VIRENZ, VIRINE, VIRIDINE, VIRAPINE, VIRTIDE, TEGRAVIR, VIROC nomenclature. [the antiretrovirals].
November 6 Friday	Medical Terminology: Endocrinology and Metabolism <i>Weekly Exam 10</i>
Nov. 9 Monday	Completion of study of drugs with VIR as part of the nomenclature. The role of vaccines relevant to viral diseases.
Nov. 12 Thursday	Pharmaceutical care applications for drugs with STATIN, CHOLES, FIBR, PIB, and THIAZIDE nomenclature [antihyperlipidemic drugs and diuretics]
Nov. 13 Friday	Medical Terminology: Neurology and psychology. <i>Weekly Exam 11</i>
Nov. 16 Monday	Pharmaceutical Care applications for drugs with OLOL, ALOL, ILOL, DARONE, (Z)OSIN, and ASTERIDE nomenclature [cardiovascular and genitourinary drugs]
Nov. 19 Thursday	Pharmaceutical care applications for drugs with DIPINE, PRIL, SARTAN, and KIREN nomenclature (cardiovascular/antihypertensive drugs)
Nov. 20 Friday	Medical Terminology: The genitourinary and reproductive systems. <i>Weekly Exam 12</i>
Nov. 23 Monday	Pharmaceutical Care applications for drugs with AMIDE, ZIDE, RIDE, GLI, GLU, GLY, GLINIDE, GLITAZONE, GLIPTIN, TIDE, GLIFLOZIN, and FORMIN nomenclature [drugs for Type 2 diabetes]
November 25 Wednesday – Follow Friday Class schedule	Pharmaceutical care applications for drugs with AZO, AZEP, AZEPAM, AZOLAM, and AZEPINE [anxiolytic/tranquilizer/muscle relaxant drugs]
November 30 Monday	Pharmaceutical Care applications for drugs with PERIDONE, IDONE, APINE nomenclature [antipsychotic drugs]
December 3 Thursday	Pharmaceutical Care applications for drugs with TRIPTYLINE, PRAMINE, OXETINE, ITALOPRAM, FAXINE, and ODONE nomenclature. [antidepressants]
December 4 Friday	Medical Terminology: Hematology and Oncology (“Heme-Onc”) <i>Weekly Exam 13</i>
December 7 Monday	Pharmaceutical Care applications for drugs with CAINE, CUR, TRIPTAN, DENAFIL, and AFIL nomenclature [local anesthetics, neuromuscular blocking agents, anti-migraine, and Erectile Dysfunction drugs]
December 10 Thursday	Pharmaceutical care applications for drugs with ROLIMUS, NIB, ALIDOMIDE, TAXEL, and PLATIN nomenclature. [anticancer drugs].
To be announced	Final Examination (cumulative) – to be scheduled during the Final Exam week. Be on the lookout for the date, time and location for the final exam !!!