

COURSE SCHEDULE

Phar 6157: Human Nutrition and Drug Therapy
3 Credits, Spring 2007
Moos Tower 1-450 Time: MWF 11:15-12:05

Date	Day	Lecture	Topic	Instructor
Part I: <i>Fundamentals of Nutrition</i>				
Jan 17	W	1	Introduction to Nutrition	Shier
Jan 19	F	2	Special Topic: Fat and the Pharmacist	Shier
Jan 22	M	3	Energy Dynamics	Shier
Jan 24	W	4	Macronutrients	Shier
Jan 26	F	5	Minerals	Shier
Jan 29	M	6	Minerals	Shier
Jan 31	W	7	Trace Elements	Shier
Feb 2	F	8	Trace Elements	Shier
Feb 5	M	9	Fat-Soluble Vitamins	Shier
Feb 7	W	10	Fat-Soluble Vitamins	Shier
Feb 9	F	11	EXAM I (Lectures 1-8; to end of Trace Elements)	Shier
Feb 12	M	12	Water-Soluble Vitamins	Shier
Feb 14	W	13	Water-Soluble Vitamins	Shier
Feb 16	F	14	Water-Soluble Vitamins	Shier
Feb 19	M	15	Vitamin Therapy	Pittenger
Feb 21	W	16	Vitamin Therapy	Pittenger
Feb 23	F	17	Nutraceuticals	Shier
Feb 26	M	18	Chemoprevention	Giganti
Feb 28	W	19	Nutrition & Cardiovascular Disease	Abul-Hajj
Mar 2	F	20	Nutrition & Cancer	Abul-Hajj
Mar 5	M	21	EXAM II (Lectures 9-20; Vitamins to Nutrition & Cancer)	Shier

Date	Day	Lecture	Topic	Instructor
Part II: Applied Clinical Nutrition Support				
Mar 7	W	22	Adult Nutritional Assessment	Barber
Mar 9	F	23	Patient Assessment, Consult Approach, RPH Role	Barber
March 12 to March 16			Spring Break	
Mar 19	M	24	Goals and Guidelines for Adult “TPN” part 1	Barber
Mar 21	W	25	Goals and Guidelines for Adult “TPN” part 2	Barber
Mar 23	F	26	Preparation / Compounding / Systems for Parenteral Nutrition	Barber
Mar 26	M	27	TPN Special Topics, Calculations for Nutrition Support	Barber
Mar 28	W	28	Organ Failure: Renal, Hepatic, Respiratory, Pancreatitis	Barber
Mar 30	F	29	Patient Case Examples & Discussion	Barber
April 2	M	30	Nutrition Support in Hypermetabolism & Stress	Barber
April 4	W	31	Neonatal & Pediatric Nutrition Support	Hauff
April 6	F	32	Neonatal & Pediatric Nutrition Support	Hauff
April 9	M	33	Parenteral and Enteral Access	Lehmann
April 11	W	34	EXAM III (March 8 - April 7 Topics, excl April 3)	Barber
April 13	F	35	Exam Review and Discussion, Homework Assigned	Barber
April 16	M	36	GI Topics: Short Bowel Syndrome, IBD, Obesity	Barber
April 18	W	37	Drug-Nutrient Interactions; Homework discussed	Barber
April 20	F	38	Enteral Nutrition, Case Example	Barber
April 23	M	39	Home Nutrition Support and Patient Case	Barber/LaChance
April 25	W	40	Nutrition Support in Cancer, BMT, Hyperemesis	Barber
April 27	F	---	PHARMACY DAY – NO CLASS	Have some fun!
April 30	M	41	Clinical Rounds & Patient Cases (LA)	Barber
May 2	W	42	Case Studies, Instructor Evaluation	Barber
May 4	F	43	Questions and Case Review	Barber
May XX	?		EXAM IV (April 2 + April 9 - May 4 Topics) During Finals Week (May7-12)	Barber/Shier

COURSE SYLLABUS

PHAR 6157
HUMAN NUTRITION & DRUG THERAPY
3 CREDITS
Spring 2006
Moos Tower 1-450 Time: MWF 11:15-12:05

Course Director: Dr. Tom Shier
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Course Faculty: Dr. Jacqueline Barber
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Twin Cities Teaching Assistants: Sonia Das E-mail: dasxx041@umn.edu
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TA Office hours: By appointment

Required Course Material:

Human Nutrition & Drug Therapy - Class Handout, available from the Bookstore by the beginning of the course.

Supplemental Textbooks:

Nutrition in Pharmacy Practice by Ira Wolinsky and Louis Williams (Eds), American Pharmaceutical Assn; Washington, D.C. (2002)

Perspectives in Nutrition, Seventh Ed., by Gordon M. Wardlaw and Jeffery Hampl, McGraw-Hill Science/Engineering/Math (2006).

Course Objectives

At the conclusion of this course each student should be able to:

1. Define "vitamin" and "trace elements"
2. Understand the relationship between nutrient uptake and drug bioavailability.
3. Recognize that pharmacy and nutrition are two fields that overlap extensively.

4. Know whether each vitamin is classified as fat-soluble or water-soluble
5. Recognize the U.S. RDA values for individual major vitamins and minerals
6. Know dietary sources of the various vitamins and trace elements
7. Know the major functions of individual vitamins and minerals in humans
8. Describe disease states or drugs that may cause vitamin or mineral deficiency
9. Describe the signs and symptoms of individual vitamin and mineral deficiencies.
10. Know the clinical effects of excessive administration of vitamins
11. Understand the relationships between nutrition, cancer, and cardiovascular disease
10. Know the major nutraceuticals available OTC
11. Choose and evaluate nutrition assessment data and devise a range of requirements and estimated needs for a patient to receive nutrition support in light of available clinical information and constraints.
12. Translate assessment goals into a parenteral nutrition regimen and a plan for implementation, monitoring, management, and discontinuation as needed to optimize patient tolerance and safety.
13. Outline principles and alternatives in design and delivery of specialized nutrition support in various clinical conditions including: renal, liver, and respiratory failure, pancreatitis, hypermetabolism, (metabolic stress), cancer/BMT, hyperemesis gravidarum, various GI conditions, and short bowel syndrome.
14. Calculate the daily nutritional needs of a neonate or pediatric patient including: kcal, protein, fat, carbohydrate, electrolytes, minerals, trace elements, vitamins, and NPC:N. Translate these needs into a regimen including these components for a typical patient.
15. Describe the importance of Home Care in current medical practice, and outline the pharmacist's role in providing Home Nutrition Support in specific settings.
16. Outline major advantages and limitations of enteral nutrition by various routes, and describe categories of commercially available enteral products and situations where each may be clinically indicated.
17. Identify and screen clinically for major as well as common drug-nutrient interactions, and outline strategies for prevention and management.
18. Describe guidelines for providing iron and insulin to TPN patients, and outline current methods for clearing occluded central catheters.
19. Differentiate between indications for central and peripheral IV access devices and explain the importance of in-line filtration of TPN formulations.

Examination and Grading Policies

- Shortly after the conclusion of each unit, an examination will be given.
- Examination questions may pertain to information presented in class, recommended readings, and handout materials. Examination questions may include the following types: multiple choice, matching, true-false, completion, short answer, and essay.
- Books, notebooks, backpacks and other personal belongings must be placed beneath the chair in which the student is seated. Materials that are placed so that they are visible to anyone taking the examination will be removed by the instructor or proctors.
- The entire class period will be allotted for each exam. Exams that are not turned in when the allotted time expires will not be graded and a score of zero will be assigned.
- Students who detect errors in examination questions are asked to notify the instructor or a monitor immediately.
- In the interest of being fair to all students, additional information or explanation of questions will not be given to individuals during examinations.

- During examinations, students should present questions only to the instructor(s), unless directed otherwise. In the interest of being fair to all students, additional information or explanation of questions will not be given to individuals during examinations.
- There will be no comprehensive final examination in this course.
- If a student cannot take an exam due to illness or other emergency the instructor must be notified prior to the exam. In such cases, the student will take a make-up exam during the final examination week. The actual score received on the make-up exam will be used in the compilation of the final total score for the course. No special examinations will be given.
- No make-up exams will be given for a failed unit. Final grade will be a compilation of all scores received on all exams.
- If a student wishes to have an examination re-graded, s/he must arrange for it within one week after the graded exam is returned.

Course Grades

- The final letter grade given to a student will be the student's total score on the four exams, with each examination being worth 25% of the total score.

•	Grading	A	>	93%
		A-	=	89-92%
		B+	=	85-88%
		B	=	81-84%
		B-	=	78-80%
		C+	=	75-77%
		C	=	71-74%
		C-	=	68-70%
		D+	=	64-67%
		D	=	60-63%
		F	<	60%

Course Evaluation

Students will have an opportunity to evaluate the course on a date to be scheduled during the last week of the instruction period of major instructors at the beginning of the class.

Honor Code

Each student is bound by the following specific provisions as part of the Code: Academic misconduct is any unauthorized act which may give a student an unfair advantage over other students, including but not limited to: falsification, plagiarism, misuse of test materials, receiving unauthorized assistance and giving unauthorized assistance. Each student will be asked to sign a cover sheet on tests and written assignments that reaffirms the honor code as it applies to this course. Specifically, each student will be required to do their own work on all tests and written assignments. For written assignments, students are allowed to discuss the assignment with other students, but all written material must be their own work and not the result of group discussions.

Disability Accommodations

Any student with a documented disability (e.g. physical learning, psychiatric, vision, hearing etc) who needs to arrange reasonable accommodations must contact the Course Director (624-5987) and Disability Services (626-1333) at the beginning of the semester. All discussions will be confidential.