

Subject Description Form

Subject Code	FSN5031
Subject Title	Advanced Pharmacology and Nutrition
Credit Value	3
Level	5
Pre-requisite	Human physiology/Cell Biology, Biochemistry
Objectives	The subject is designed to provide students in Master in Dietetics a strong foundation in pharmacologic principles of drugs and therapy. It equips students with problem solving skills, analytical skills and conceptual framework to discuss issues from pharmacologic, therapeutic and toxicological perspectives associated with dietetic and nutrition. In addition, it will help develop students' critical thinking for their personal development.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: - Understand and analyze pharmacological issues with an insight of the basic principles on the mechanisms of action and the fate of drug inside the body. - Understand the major drug families and the therapy of selected diseases. - Explain the differences and similarities between drug, dietary supplements and functional foods. - Evaluate the therapeutic and toxic effects of drugs and understand the major mechanisms of food-drug interactions. - Develop analytical, critical thinking, oral and written communication skills.
Subject Synopsis/ Indicative Syllabus	Basic principles of Pharmacology: - History of pharmacology and its relationship with nutrition disciplines. - Definition, nature and sources of drugs, drug nomenclature. - Effects of drugs on the body---pharmacodynamics - Effects of the body on drugs---pharmacokinetics - Drug discovery and development Pharmacology of the autonomic and central nervous systems: - Basic principles of neural transmission. - Drugs affecting the nervous system. - Drugs for neurological and psychiatric disorders. Drugs affecting major organ system: - Basic principles and drugs for cardiovascular disorders - Basic principles and drugs for disorders in endocrine system. - Basic principles and drugs for digestive system. Drugs, nutrient and functional food - Effects of drugs on food utilization - Types and mechanism of food-drug interactions - Food as medicine: Functional food and nutraceuticals - Alternative and complementary medicine

	Basic principles of toxicology and risk assessment: - Spectrum of undesirable effects. - Classification and mechanisms of major toxic agents including carcinogens and teratogens. - Chemical residues and natural contaminants. - Basic principles in the treatment of poisoning. - Basic evaluation and tests of drug toxicity in animals. - Determination of LD50, TD50 and therapeutic index.																																													
Teaching/Learning Methodology	Interactive lectures are used to provide general outlines of key concepts of the subject and to guidance on further applications and readings. Each interactive lecture has several sessions of short lectures to provide basic theoretical framework to students. After each short lecture, in-class activities (case studies, group discussion, etc) focusing on high order thinking are used to enhance students' learning and knowledge. Tutorials are designed to provide the environment for discussions on the subject materials. In-depth exercises and case studies are held in the tutorials to consolidate and integrate their knowledge.																																													
Assessment Methods in Alignment with Intended Learning Outcomes	<table border="1"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th><th rowspan="2">% weighting</th><th colspan="5">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th></tr> <tr> <th>a</th><th>b</th><th>c</th><th>d</th><th>e</th></tr> </thead> <tbody> <tr> <td>1. Individual Assignment</td><td>20</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓ ☐</td></tr> <tr> <td>2. Group presentation</td><td>30</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓ ☐</td></tr> <tr> <td>3. Final examination</td><td>50</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓ ☐</td></tr> <tr> <td>Total</td><td>100 %</td><td colspan="5"></td></tr> </tbody> </table>						Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					a	b	c	d	e	1. Individual Assignment	20	✓	✓	✓	✓	✓ ☐	2. Group presentation	30	✓	✓	✓	✓	✓ ☐	3. Final examination	50	✓	✓	✓	✓	✓ ☐	Total	100 %					
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Student Study Effort Expected	Class contact:																																													
	▪ Lecture					26 hours																																								
	▪ Tutorial					10 hours																																								
	▪ Presentation					3 hours																																								
	Other student study effort:																																													
	▪ Preparation for test and group presentation					32 hours																																								
	▪ Self-study					40 hours																																								
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	Total student study effort					120 hours																																								

Reading List and References	<u>Essential</u> 1. Rang, H.P. Dale, M.M. Ritter, J.M. Pharmacology 7th Edition Churchill Livingstone, 2011 2. Richard D Howland, Pamela C. Champe. Lippincott's Illustrated Reviews: Pharmacology. 4th Edition. Lippincott Williams & Wilkins, 2009 <u>Supplementary</u> 1. Katzung, B.G. Basic & Clinical Pharmacology 11th Edition McGraw-Hill Medical, 2009 2. Stringer, J.L. Basic Concepts in Pharmacology 3rd Edition McGraw-Hill, 2006 3. Hardman JG, Limbird LE, Gilman AG. Goodman & Gilman's The Pharmacological Basis of Therapeutics. 11th Edition. New York: McGraw-Hill, 2006. 4. Lu, F.C., Sam Kacew. Basic Toxicology: Fundamentals, Target, Organs and Risk Assessment 5th Edition Informa Healthcare 2009
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