

Subject Description Form

Subject Code	FSN5022
Subject Title	Nutritional assessment
Credit Value	3
Level	5
Pre-requisite	Nil
Objectives	The aim of this subject is for students to acquire an understanding of dietary, biochemical, and anthropometric assessment of nutritional status.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> Identify and describe the principles of nutrition assessments; Conduct dietary assessments and anthropometric assessment using various methods while understanding the strength and limitations of each method; Assess the nutritional status of individuals using results from dietary assessments, nutrition surveys or biomarkers of corresponding nutrients.
Subject Synopsis/ Indicative Syllabus	<p><u>Introduction of Nutritional assessment systems</u></p> <p>Nutrition surveys, nutrition surveillance, nutrition screening, nutrition interventions and assessment systems in the clinical settings.</p> <ul style="list-style-type: none"> - Theory and methods of investigating the dietary, nutrient and activity pattern of the general population, sub groups and the individuals - Scientific basis for the measurement and estimation of nutritional requirements, dietary reference values for general population <p><u>Nutritional assessment methods</u></p> <p>General principles, strengths and limitations of dietary, anthropometric, biochemical, physiological, functional and clinical methods</p> <p>Food consumption at national and household levels at national level (Food balance sheets, Total diet studies) and at household level (Food account method, Household food record method, Household 24-hr recall method)</p> <p><u>Dietary Assessment</u></p> <p>Methods for measuring food consumption of individuals: 24-hr recall method, repeated 24-hr recalls, Estimated food records, weighed food records, dietary history, food frequency questionnaire. Technical improvements in food consumption measurements</p> <p>Nutrient analysis of foods and diets: food consumption databases, food composition tables, sources of error in food composition values, interpretation and report nutrition related data using appropriate qualitative and quantitative statistical methods</p> <p><u>Energy Balance Assessment</u></p> <p>Principles and methods of measurement and estimation of energy balance, energy expenditure, physical activity and fitness, body mass, body</p>

	<p>composition, how body mass and energy balance are controlled.</p> <p><u>Anthropometric Assessment</u> Measurement of body weight, height, skin-folds, arm circumference. Assessment of body composition, body fat, fat-free mass, muscle mass, growth indices, body mass index (BMI), frailty status and infant growth.</p> <p><u>Biomarkers for assessing nutritional status and intake:</u> <u>Introduction of nutrients and their functions, metabolic pathways and consequences of nutrient deficiency.</u> Assessment the nutritional status of protein, vitamins and minerals (e.g. calcium and iron) Different types of biomarkers for assessing intake and dietary pattern: recovery biomarkers, concentration biomarkers, predictive markers and functional markers Methodological considerations: Specimens (blood, urine, feces, tissue, hair, nails), sample collection and storage, analytical methods, limitations, good clinical practice</p> <p><u>Nutrition assessment throughout life cycle:</u> Changes in nutritional needs with age, gender, physical activity, lifestyle in human Nutrition assessment during Pregnancy, Lactation, Infancy, Childhood, Adolescent, Adults, Elderly</p>																																	
Teaching/Learning Methodology	<p>Lecture: the fundamental principles and facts of nutritional assessments will be explained. Examples and applications will be used to illustrate the concepts and ideas in the lecture. Students are provided with chance for independent studying and enhancing their knowledge through interactive in-class discussion. Tutorials and Laboratories: Data collected from the laboratory sessions, review/problem solving questions or lab reports will provide students with the opportunity to apply and consolidate the knowledge gained from the lecture. Analytical and writing skills from lab reports will be assessed.</p> <p>In-depth exercises and case studies are held in the tutorials to consolidate and integrate their knowledge. In laboratory sessions, students will have hand-on experience in practicing nutritional assessment (anthropometric measurement, dietary recall etc).</p>																																	
Assessment Methods in Alignment with Intended Learning Outcomes	<table><tr><th rowspan="2">Specific assessment methods/tasks</th><th rowspan="2">% weighting</th><th colspan="3">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th></tr><tr><th>a</th><th>b</th><th>c</th></tr><tr><td>1. Test</td><td>25 %</td><td>✓</td><td>✓</td><td></td></tr><tr><td>2. Lab Reports</td><td>15 %</td><td></td><td>✓</td><td>✓</td></tr><tr><td>3. Assignments</td><td>20 %</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>4. Final examination</td><td>40 %</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Total</td><td>100%</td><td></td><td></td><td></td></tr></table>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)			a	b	c	1. Test	25 %	✓	✓		2. Lab Reports	15 %		✓	✓	3. Assignments	20 %	✓	✓	✓	4. Final examination	40 %	✓	✓	✓	Total	100%			
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	<p>Test: It is used to assess the students' understanding on the principles of nutritional assessments, the methods of nutritional assessments as well as their strength and weakness.</p> <p>Lab reports: Lab reports are used to assess the students' practical skills of using various assessment methods to conduct nutritional assessments.</p> <p>Assignments: The students are required to do individual assignments and case analysis on applying various nutrition assessment methods to assess the nutrition status for individuals with different nutritional needs or health conditions. They are used to assess the learning outcomes a, b, c and d.</p> <p>Examination: It is used to assess the students' understanding and application on the knowledge of nutritional assessments for individuals at different life stages.</p>	
Student Study Effort Expected	Class contact:	
	▪ Lecture	30 hours
	▪ Tutorial/Seminar	5 hours
	▪ Laboratory	4 hours
	Other student study effort:	
	▪ Lab report/assignment writing	30 hours
	▪ Self-study	50 hours
	Total student study effort	119 hours
Reading List and References	<p>Dale A. Schoeller, Margariet S. Westerterp-Plantenga. Advances in the Assessment of Dietary Intake, CRC Press LLC, 2017</p> <p>FAO. Dietary Assessment: A resource guide to method selection and application in low resource settings. Rome, 2018.</p> <p>Ghazi Daradkeh, M. Hohamed Essa Nejib Guizani. Handbook for Nutritional Assessment through life cycle, Nova Publishers, New York, 2016</p> <p>Julie A Lovegrove, Leanne Hodson, Sangita Sharma, Susan A Lanham-New. Nutrition Research Methodologies, John Wiley & Sons, 2015</p> <p>Munoz, N. & Bernstein, M. (2019). Nutrition assessment: clinical and research applications. Burlington, MA: Jones & Barlett Learning.</p> <p>Rosalind S. Gibson. Principles of Nutritional Assessment, 2nd edition, Oxford University Press, 2005.</p>	