

PHU5308 - FUNDAMENTALS OF GEOPHYSICS

Semester and Level	Second	Level	5			
Course Code	PHU5308					
Course Title	Fundamentals of Geophysics					
Credit value	3					
Core/Optional	Optional					
Prerequisites	Pass/OCAM/Concurrent Registration in PHU5305					
Hourly Breakdown	Theory		Practical hours	Independent Learning	Assessments	Total hrs
	20 Sessions X 2 = 40 hrs	4 DS x 3 hrs = 12 hrs	Lab/field work 6 hrs x 2 days = 12 hrs	20 Sessions (x 3) = 60 hrs Online /Audio-visual materials and other learning resources = 25 hrs	Continuous Assessments (2 CA) = 2 hrs	151 hrs
Course Aim/s	Students who follows this course should be able to obtain to provide the students a strong understanding on the fundamental geophysical methods and their new trends, To review the fundamental techniques of geophysical data collection and analysis, to develop field geophysical skills through a combination of lectures and practical field exercises, to learn how to apply geophysical techniques in mineral resources exploration, environmental studies and engineering geology, The necessary skills required for employment after graduation					
PLOs addressed by course	<p>PLO1: Knowledge - Explain the fundamental, principles and broader knowledge pertaining to the chosen science disciplines offered for the BSc degree.</p> <p>PLO2: Practical Knowledge and Application - Acquire competency in practical skills and the necessary knowledge to appropriately use these skills.</p> <p>PLO4: Individual Work, Team Work and Leadership - Function effectively as an individual, and as a team member, sharing work and experiences, leading and managing assigned tasks to completion on time, demonstrating leadership to address situations in diverse and multi-disciplinary environments in day to day life.</p> <p>PLO5: Creativity and Problem Solving - Identify problems and argue out and analyze such problems using qualitative and/or quantitative practical approaches in scientific methodology to provide valid conclusions.</p> <p>PLO8: Vision for Life - Identify where one wants to be and develop long term goals maintaining competency to conduct scientific investigations and proceed to undertake further studies.</p>					

Course Learning Outcomes (CLO):	<p>Students following this course should be able to:</p> <p>CLO 1 - an understanding of interactions of the solid Earth through the applications of geophysics [PLO 1, PLO 2, PLO 5, PLO 8]</p> <p>CLO 2 - learn the materials of Earth's crust including rocks and minerals through geophysical applications [PLO 1, PLO 2, PLO 5, PLO 8]</p> <p>CLO 3 - learn how to apply these principles in real applications [PLO 2, PLO 5, PLO 8]</p>	
Teaching-Learning methods	<ul style="list-style-type: none"> • Self-learning/independent learning of self-study <ul style="list-style-type: none"> • Instructional Materials (IL) • Online Activities (OL) • Reference Work (RE) • AV materials (AV) • Compulsory contact sessions <ul style="list-style-type: none"> • Practical Sessions (PR) • Field Trip (FT) • Non-compulsory contact sessions <ul style="list-style-type: none"> • Day Schools (DS) • Online components and Continuous assessments <ul style="list-style-type: none"> • Practical Tests (PT) • Field Assignment (FA) • MCQs (MCQ); • Structured Essay (SEQ); • Essay Questions (ES) 	
Content (Main topics, sub topics)	<p>Geophysical Methods and its Applications: Principles of gravity, magnetic, seismic, electromagnetic, electric and radioactive methods.</p> <p>Practical Work: Solving problems using principle geophysical methods and its practical experience through field survey</p>	
Assessment Strategy	Overall Continuous Assessment Mark (OCAM): 40%	Final Assessment (FE): 60%
	<p>Continuous Assessment (CA)</p> <p>48 % of The Best NBT (one hour) + 32 % of The Other NBT (one hour) + 20 % of Practical Assessment (PM) (one hour)</p>	<p>Final Evaluation</p> <p>Theory: 100 % of (two hours)</p>
Recommended Reading	<ol style="list-style-type: none"> 1. Fundamentals of geophysics – 1997, Lowrie, William, 550, L58 2. Handbook of exploration geophysics – 1991 Chapel, Paul A., 550, C31 3. Introduction to applied geophysics – 1984, Mares, Stanislav, 622.15, M16 	