Module code	SG-4309			
Module Title	Metamorphic Petrogenesis			
Degree/Diploma	Bachelor of Science (Geology)			
Type of Module	Major Option			
Modular Credits	4	**Total student Workload**	10	hours/week
		Contact hours	4	hours/week
Prerequisite	SG-1203 Introduction to Crystallography and Mineralogy, SG-2304 Igneous and Metamorphic Rocks, SG-4303 Igneous Petrogenesis			
Anti-requisite	SG-4312 Igneous ad Metamorphic Petrogenesis			

Aims

Students will acquire advanced information on petrogenetic issues of metamorphic rocks. They will understand the processes of rock transformations on Earth and they will familiarise themselves with the roles of the thermodynamics and the geochemical processes in the metamorphic systems. The students will develop their skills by applying thermodynamic laws on metamorphic rocks, as well as by using various methods to interpret metamorphic systems.

Learning Outcomes

On successful completion of this module, a student will be expected to be able to:

Lower order :	30%	- describe and identify various metamorphic lithotypes - report and understand the thermodynamic laws in metamorphic systems
Middle order :	50%	- investigate the relations of textural features with metamorphism on Earth - organise information from scientific papers and to analyse their data - interpret macroscopic andmicroscopic textures and structures - investigate metamorphic petrogenetic reactions
Higher order:	20%	- calculate temperatures and pressures of formation of rocks - apply thermodynamic laws and justify the physicochemical conditions in metamorphic systems - read and comprehend relevant, professional publications

Module Contents

- Fundamentals of metamorphic processes, metamorphic zones, isograds and facies.
- Plot of assemblages on petrogenetic grids (AFM, ACF plots) and metamorphic reactions
- Geochemical processes during metamorphic episodes.
- Determination of pressure-temperature conditions in metamorphic systems.
- Geotectonic, metamorphic environments.

Assessment	Formative assessment	Practical tests, assignments and feedback
	Summative assessment	Examination: 50%
		Coursework: 50% - 1 class test (25%) - 1 Practical test (25%)