

## Categorizing student performance levels

### GEOL0008 Geochemistry

Excellent is the performance expected of students gaining a first class module mark.

Typical is the performance currently expected of students at the Lower/Upper Second class boundary for the module.

Threshold is the minimum performance currently required to pass the module.

Definitions	Excellent performance	Typical performance	Threshold performance
<b>Intellectual skills / knowledge and understanding</b>	<p>Knowledge base extending beyond the directly taught programme (e.g. reference to research papers).</p> <p>Thorough understanding of elemental creation in stars and distribution on Earth and in the solar system. Thorough understanding of the periodic table and chemical bonding.</p> <p>Thorough knowledge of the general chemical formulae of the common rock-forming minerals.</p> <p>Thorough knowledge of simple P-T, P-X and T-X phase diagrams in two or more component systems.</p> <p>Thorough understanding of the phase and lever rules as applied to phase diagrams.</p> <p>Thorough understanding of the concept of phase transitions in the Earth which can be induced by pressure, temperature or composition.</p> <p>Thorough grasp of the Gibb's free energy and its use in calculating phase equilibria.</p> <p>Thorough grasp of the principles of aqueous geochemistry and controls over mineral solubility.</p> <p>Thorough understanding</p>	<p>Knowledge of the directly taught programme and some evidence of enquiry beyond that.</p> <p>Understanding of elemental creation in stars and distribution on Earth and in the solar system.</p> <p>Understanding of the periodic table and chemical bonding.</p> <p>Knowledge of the general chemical formulae of the common rock-forming minerals.</p> <p>Knowledge of simple P-T, P-X and T-X phase diagrams in two or more component systems.</p> <p>Understanding of the phase and lever rules as applied to phase diagrams.</p> <p>Understanding of the concept of phase transitions in the Earth which can be induced by pressure, temperature or composition.</p> <p>Grasp of the Gibb's free energy and its use in calculating phase equilibria.</p> <p>Grasp of the principles of aqueous geochemistry and controls over mineral solubility.</p> <p>Understanding of basic principles of isotope geochemistry and mass</p>	<p>Knowledge based on the directly taught programme.</p> <p>Basic understanding of elemental creation in stars and distribution on Earth and in the solar system.</p> <p>Basic understanding of the periodic table and chemical bonding.</p> <p>Basic knowledge of the general chemical formulae of the common rock-forming minerals.</p> <p>Basic knowledge of simple P-T, P-X and T-X phase diagrams in two or more component systems.</p> <p>Basic understanding of the phase and lever rules as applied to phase diagrams.</p> <p>Basic understanding of the concept of phase transitions in the Earth which can be induced by pressure, temperature or composition.</p> <p>Basic grasp of the Gibb's free energy and its use in calculating phase equilibria.</p> <p>Basic grasp of the principles of aqueous geochemistry and controls over mineral solubility.</p> <p>Basic understanding of basic principles of isotope geochemistry and mass</p>

	of basic principles of isotope geochemistry and mass balance.	balance.	balance.
<b>Communication skills</b>	Ability to write critically, efficiently and effectively.	Ability to write efficiently and effectively.	Ability to write effectively.
<b>Practical Skills</b>	Outstanding ability to: (i) use the systematics of the periodic table to predict chemical formulae and to write balanced reactions; (ii) calculate normative mineral assemblages from bulk rock compositions (iii) simple phase relations in P-T-X space; (iv) apply the relevant thermo-dynamic relations to predict solubilities in aqueous systems.	Ability to: (i) use the systematics of the periodic table to predict chemical formulae and to write balanced reactions; (ii) calculate normative mineral assemblages from bulk rock compositions (iii) simple phase relations in P-T-X space; (iv) apply the relevant thermo-dynamic relations to predict solubilities in aqueous systems.	Basic ability to: (i) use the systematics of the periodic table to predict chemical formulae and to write balanced reactions; (ii) calculate normative mineral assemblages from bulk rock compositions (iii) simple phase relations in P-T-X space; (iv) apply the relevant thermo-dynamic relations to predict solubilities in aqueous systems.
<b>Numeracy &amp; IT skills</b>	Highly developed ability to calculate e.g. phase relations using the Gibbs free energy. Ability to use web browsers to access e.g. mineral databases.	Ability to calculate e.g. phase relations using the Gibbs free energy. Ability to use web browsers to access e.g. mineral databases.	Basic ability to calculate e.g. phase relations using the Gibbs free energy. Ability to use web browsers to access e.g. mineral databases.
<b>Interpersonal/ Teamwork</b>			
<b>Self-management</b>	Outstanding ability to organise themselves to produce required work of excellent standard on time.	Ability to organise themselves to produce required work of good standard on time.	Ability to organise themselves to produce required work of acceptable standard on time.