

Categorizing student performance levels

GEOL0018 Numerical methods for Earth Sciences

Excellent is the performance expected of students gaining a First class honours (BSc) Typical is the performance currently expected of students at the Lower/Upper Second class boundary (BSc).

Threshold is the minimum performance currently required to gain an honours degree (BSc).

Definitions	Excellent performance	Typical performance	Threshold performance
Intellectual skills -knowledge and understanding	Thorough understanding of the different types of finite difference methods for parabolic and hyperbolic PDEs, and of Runge-Kutta method for ODEs. Understanding of various types of errors in numerical computing.	Good understanding of the range of methods available to solve common ODEs and PDEs, their strengths and weaknesses.	Basic understanding of finite differences to approximate ODEs and PDEs.
Practical skills	Independent and rigorous derivation of algorithms. Ability to write new code from scratch and debug without supervision.	Ability to rederive algorithms viewed in class with minor supervision. Ability to write new code and debug with some help.	Ability to rederive algorithms viewed in class with help. Ability to modify existing code to adapt to new situations.
Communication skills	Ability to write comprehensive, numerical paper using LaTeX and make publication-quality figures. Good sense of clarity and conciseness.	Good use of LaTeX for technical documents. Make clear figures. Ability to improve text based on comments.	Basic LaTeX skills and understanding of key elements in technical figures.
Numeracy and C & IT skills	Independent use of available resources (Matlab help files, online searches) to solve problems. Operational level of numerical methods. Able to use other programming languages.	Understanding of key matlab concepts and functions. Independent use of help resources.	Basic understanding of matlab and ability to solve problems with guidance.