GEOL344 Field Schools Schedule and Gear List 2027

4 February: Compulsory First Aid Course for GEOL344 and GEOL302
Meet in the Stage 1 Lab and Benson Room from 8:30 to 16:30 for a day long first aid course.
Note: *****NZ Red Cross (**online training** must be completed prior).****
If you have a current valid First Aid qualification please email it to brent.pooley@otago.ac.nz so we can check whether you attained this requirement and do not need to show on this day.

6,7,8, February Waitangi weekend holiday
Students responsible for own accommodation

9-11 February: Catlins field school
Staff: *Doug MacKenzie*
Transport: *Bus transport departing from campus in the morning and returning each evening. BYO lunch.*
Day trips by bus to the Catlins coastline, returning to Dunedin each night. No camping gear required – just field work gear and hi-vis. Students responsible for own accommodation

12-21 February: Maerewhenua field camp: Danseys Pass Holiday Park
Staff*: Sophie Briggs, Christina Riesselman, Doug MacKenzie,*
Transport*: Bus transport departing from and returning to campus*
Field camp based out of Dansey Pass Holiday Park mapping the Maerewhenua area.
12 Feb: Meet 8:30 am at north door of Geology Building, drive to Maerewhenua + afternoon geological reconnaissance.
13-19 Feb: Mapping Basalt Hill.
20 Feb: Report writing, Intro to volcanic rocks
21 Feb: Lookout Bluff volcanic section and mapping. 16:00: return to Dunedin

Waianakarua report deadline
17:00 Friday 26 February

GIS mapping sessions
Staff: *Hamish Bowman*
Friday labs from 2-5 p.m. location of lab to be confirmed
5 March February - aCAL
12 March - aCAL
19 March - aCAL
25 March- aCAL
16 April- aCAL
23 April - aCAL
30 April – aCAL if required

Final GIS map compilation
Due 12:00 noon Monday 3 May

GEOL344 Field Schools Gear List 2027
(in addition to the normal things you would bring on a week-long outdoors trip)

Personal safety equipment and clothing: you will not be allowed into the field without this.

- ☐ High-vis vest
- ☐ Strong footwear (boots)
- ☐ Sun hat and sun cream
- ☐ Warm and waterproof clothing, including multiple changes of socks - this is critical as we do not stop work when it rains!
- ☐ Water bottles to carry at least 2L of water
- ☐ A whistle
- ☐ Watch or phone
- ☐ A day pack large enough to carry all of your field equipment, lunch, and water. We recommend using a dry bag to keep items (e.g. spare clothing) dry

Personal work equipment: you must have every item on this list - you will not always be able to share equipment and we have very limited spares.

- ☐ Hand lens (10x magnification - available at UBS)
- ☐ Compass-clinometer (e.g. Suunto, Silva – available at UBS)
- ☐ Hammer (geological or prospector's hammer, small sledge, or mason/brick hammer)
- ☐ Field notebook (we recommend a good-quality geological notebook, hard-bound, no ring binding)
- ☐ Range of pencils
- ☐ Range of coloured pencils and pencil sharpener
- ☐ Black technical pens (0.1 mm required: 0.05 mm black and 0.1 mm red are also useful)
- ☐ Erasers
- ☐ White-out/correction fluid (fluid type, not tape)
- ☐ 30 cm ruler
- ☐ Protractor
- ☐ Calculator

For Maerewhenua Camp (some camping items can be rented from UniPol)

- ☐ Sleeping Bag *and* sleeping mat or camping mattress
- ☐ Tent (Dept. has a number of tents for your use – see Ray about borrowing. BYO if you prefer not to share)
- ☐ Pillow
- ☐ Towel

Optional recommended equipment
Gaiters, camera, binoculars, penknife, headtorch, measuring tape, hiking poles, first aid kit and personal medications, insect repellent, other luxuries/food you can't live without for a week. The campground usually has enough plates, bowls, cups, and cutlery for us to use, but BYO if you prefer.

Geology Department will provide (to be returned at the end of the trip):

- Heavy-duty plastic bag, large enough to write notes in when it rains
- A4 Mapboard with plastic cover
- Grain size comparator
- Hard hat
- All maps, card, and worksheets that you need for exercises
- Dilute HCl will be available to be shared around

Tips for choosing equipment:

Items for sale at the University Bookshop (UBS): hand lenses, hammers, notebooks, compass-clinometers:https://www.otago.ac.nz/geology/admin-health-safety/shop.html

Hi-vis vests
Average price: ~$10
Specifications: Must be fluoro and have reflective bands. Any colour is fine.
Where to find: Road Materials Workgear provides students 10-15% discount with student ID

Road Materials Workgear: 6 Birch St, Dunedin 9016

https://www.roadmaterials.co.nz/Caution-TTMC-W23-Basic-Safety-Vest

Footwear
Average price: >$100

Specifications: For the type of field work we will be doing, you will be far more comfortable in boots (day hiking or backpacking) than you will be in running shoes. Several footwear options are listed below – what you choose will be based on your personal needs and budget.

Some general tips when choosing footwear:

- Leather versus synthetic is a personal choice. Generally you'll be making more of a long-term investment with leather, as it lasts longer. On the downside, leather is more expensive, can be heavier, and takes longer to break in.
- Waterproof membranes like Gore-Tex are common in boots these days. They do keep water out, but can also reduce breathability making your feet more sweaty on hot days.
- Take the time to make sure you've got the right size for your foot, and bring the socks you're going to wear when trying them on. Hiking boots should not be tight, and keep in mind that your feet will swell in hotter weather.





Hiking shoes/trail running shoes:

Lightweight shoes with flexible soles. Disadvantages include lack of grip, short lifespan compared with hiking boots, and lack of ankle support to prevent injuries.



Day hiking boots:

Day hiking boots are generally mid- to high-cut, providing ankle support that prevents sprains and rolled ankles when carrying heavy loads or walking off-road (we do a lot of this). Moderately flexible soles that don't require as much breaking-in as backpacking boots, but they are less durable as a result.



Backpacking boots:

More durable with stiffer soles than day hiking boots. Good for off-road and carrying large packs on multi-day trips.

Day packs

Price range: $50-$250

Specifications: Bag size should be around 20-30 litres, and be able to carry all of your field equipment, lunch, and water (2L minimum).



Left: 11-20 litre daypack and carrying capacity. Right: 21-35 litre daypack and carrying capacity. From https://www.rei.com/learn/expert-advice/daypack.html

*Consider also getting a plastic pack liner ($), dry bag ($$), or waterproof pack cover ($$) to keep your stuff dry when it rains.

Field Notebook

Price range: <$10-$50

Specifications: Avoid ring-bound notebooks – pages tend to fall out of these. Go for hard-cover and waterproof if you can. These are an investment, but should last you through GEOL344, GEOL302, and beyond to postgrad or your first job (if your handwriting is not too large).

Some options:

- $ https://www.warehousestationery.co.nz/search?q=A5%20book (A5 book not waterproof)
- $ Rite in the Rain softcover notebook (available at UBS)
- $$$ Rite In The Rain Geological Notebook hardcover (*recommended*, available at UBS)
- $$$ Karst Stone Paper Notebook (haven't tested this in the field yet)

Hand Lens

Price range: $13.50-$30

Specifications: Should be 10x magnification. Plastic hand lenses are cheaper, but the lenses are easily scratched. Metal/glass hand lenses are more durable and have a longer lifespan. Available at UBS.

*Attach your hand lens to a string or lanyard so you can hang it around your neck. Hand lenses are one of the easiest things to lose in the field. Just like your compass, it pays to keep them on a string.

Hammer

Price range: $40-$120

Specifications: You are going to be using your hammer on a variety of different materials, mostly for the purpose of getting a freshly exposed surface to examine with your hand lens. The classic geological hammer is the Estwing rock pick with a pointed tip for digging into softer materials, and a blunt tip for hammering hard rock. Importantly, proper geological hammers are made of one piece of steel for the head and handle, and are made to reduce splintering. Cheaper options available at hardware stores include small sledge hammers (blunt, not as useful for soft materials), or mason/brick hammers. You don't really want to be carrying anything heavier than ~1 kg. Whatever you do, **do not** buy a claw hammer (i.e. carpenters hammer) as they are not tempered for hammering hard rock, and

can splinter into shards.

Some options:

- $ Brick hammer
- $ Small sledge hammer
- $$ Estwing geological hammer (*recommended*, available at UBS)
- https://www.unibooks.co.nz/index.php?route=product/product&path=362_371_86410_86823&product_id=55

Compass-clinometer

Price range: $160

Specifications: We recommend purchasing your compass-clinometer through UBS, who have ordered models that we have vetted (Suunto MC2G). The tricky thing with compasses is that the needles need to be balanced for use in the Southern Hemisphere, which many that you can buy online are not. They should also have adjustable declination, a mirror and a clinometer. The Suunto MC2G model is suitable for use in NZ and is the best model we know of on the market right now.

*Note that most compasses do not come with a level bubble. You should buy a compass well before your field camp departure date so you have time for us to glue on a level bubble for you (supplied by the department).

Technical Pens

Price range: ~$5-$10 each

Specifications: Often called 'micron pens', these pens are ideal for making maps as the ink is waterproof, permanent, and does not bleed. They come in a range of tip thicknesses. You will need at least one black 0.1 mm technical pen, but we recommend also having a 0.05 mm black and 0.1 mm red pen on hand. Different pen thicknesses are used to denote different symbols on your map (e.g. faults are generally drawn in thicker pen than geological contacts).

Common brands are Artline, Uni pin, Sakura Pigma Micron.

*You can buy these pens from stationary or art stores, but be aware that stock is generally low in Dunedin's stationary stores by February, so it pays to get them in advance in case more stock needs to be ordered in.

*Be careful when using these pens with rulers. Pen tips are made of fibre and reinforced with metal, but if you press too hard or drag them along a ruler they can easily shred.

Gaiters

Gaiters are basically cuffs worn around your ankles and over your boots, to keep dirt, stones, and water from getting into your boots.

Price range: $30-$100

Specifications: There are a few kinds of gaiter designed for different uses. Hiking gaiters are usually waterproof and lightweight, and range in height from over-the-ankle to knee. Low over-the-ankle gaiters are good for summer use. Mid-calf gaiters are good for keeping water out of your boots when doing brief stream crossings (if you stand in the water above your boot line, water will eventually seep in). Knee gaiters are designed for particularly rugged conditions or bad weather.



Sleeping bag

Price range: ≥$50

Specifications: When buying a sleeping bag, take into account the lowest temperatures you want to use it in, the type of insulation you want, and weight. Synthetic insulation dries out faster when wet, but takes up more space. Down sleeping bags are good for cold, dry conditions and take up less space.

Overnight low temperatures can range from 3-15° in the Waianakarua area during February.

*Consider also getting a sleeping bag liner to help keep your bag clean.

Sleeping mat/pad/stretcher

Price range: ≥$15

Specifications: There are basically three types of sleeping pads/mats: air, self-inflating, and foam mats. Air pads are compact but less insulating. Self-inflating pads have a combination of foam and air and expand automatically. They are more insulating and durable than air pads. Foam mats are the cheapest option and most durable, but can be bulky and less comfortable. Stretchers are an alternative option – they position you off the ground, but don't provide any insulation so should only be used in summer months or paired with well-insulated sleeping bags.

Fieldwork Clothes:

The best piece of advice here is wear what you will feel comfortable in, and have clothes for all kinds of weather. Rain jackets and boots are made of materials that deteriorate over time, so if you don't already have them, these are the items that you want to buy brand-new if you can. Most other items of clothing like hiking pants, shirts, fleece, thermals, etc can be bought second-hand.

Other nice-to-haves not mentioned above include:

- Wide-brimmed sunhat (it's very easy to get sunburnt in a cap when you're outdoors all day).
- Belt + belt pouches, tool straps, etc that can hang off your belt. These are handy for holding your compass, pencils, notebook, hammer, etc so you don't have to fish around in your backpack at every outcrop. You can often find these items in stores that sell army surplus items. Plateau Design pouches are awesome but you have to pay for international shipping, and Rite in the Rain ones are also pretty pricey. Or you can always go with a good old bumbag.
- Sunglasses to protect your eyes against the extra reflective rocks. Probably best to leave fancy sunglasses at home because they're easy to lose/break in the field. You have to take off sunglasses to use your hand lens, so it can be useful to put them on a sunglass strap.
- Light long-sleeved shirts (cotton or quick-dry synthetic) to cover up from the sun while keeping cool. Daily high temperatures will be around 20°, but they can often reach 30° or above in Waianakarua.