Palaeontology

Palaeontology is the study of the fossilised remains of Earth's past animals, plants and bacteria. Palaeontologists study anything from dinosaurs, birds, marine invertebrates down to microscopic plants and animals to work out their function, ecology, evolution and extinction - and to tell geological time through fossils. Palaeontologists use this information to work out when different organisms evolved, who ate who, and how and why some organisms have survived for hundreds of millions of years while others went extinct. Palaeontology can be applied in petroleum geology studies through biostratigraphy, and used to study past earthquakes through detailed palaeoecological studies tracing past environmental disturbances. If you like fossils, have attention to detail, and are good at solving abstract problems a career in palaeontology could be for you.

Career Paths

Geology graduates specialising in Palaeontology are prepared for a range of careers in the Earth sciences. They may go on to teaching or to university and museum-based research or technical positions, Crown Research Institutes (as palaeoecologists or biostratigraphers researching earthquake and tsunami events), or into the petroleum industry as biostratigraphers.
**Palaeontology**

**My degree plan**

The following pathway is for a major in Geology leading to postgraduate study in geology and palaeontology. It is a suggested minimum for the field of Palaeontology. If you would like to double major in Geology and Biology this will require detailed planning and you should talk to the Science Student Advisor and Earth and Environment course advisors.

### Year 1: BSc Major in Geology

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<tr>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Summer (SU)</th>
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<tbody>
<tr>
<td>GEOL111</td>
<td>GEOL115</td>
<td>Optional</td>
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<td>SCIE101</td>
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### Year 2

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<tr>
<td>GEOL240</td>
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<td>GEOL242</td>
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### Year 3

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<th>Semester 1</th>
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<th>Summer (SU)</th>
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<tr>
<td>GEOL352</td>
<td>GEOL351</td>
<td>Optional</td>
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<td>GEOL357</td>
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### Year 4

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<th>BSc (Hons), PGDipSc, MSc part 1</th>
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<tr>
<td>Semester 1</td>
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<tr>
<td>GEOL481</td>
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* another 300 level GEOL paper

**Note:** GEOL352 is held in mid-February before the start of Semester 1. GEOL351 and GEOL352 along with another 60 points at GEOL300 level is required for postgraduate study in GEOL. 7 papers are strongly recommended.

#### 100 level courses

- **GEOL111** Planet Earth: An Introduction to Geology (S1 or SU)
- **GEOL115** The Dynamic Earth System (S2)
- **SCIE101** Science, Society & Me (S2)

#### 200 level courses

- **GEOL240** Field Studies A - Mapping (S1)
- **GEOL241** Field Studies B - Field Techniques (S2)
- **GEOL242** Rocks, Minerals and Ores (S1)
- **GEOL243** Depositional Environments and Stratigraphy (S1)
- **GEOL244** Structural Geology and Global Geophysics (S2)

#### 300 level courses

- **GEOL331** Principles of Basin Analysis (S2)
- **GEOL354** Geodynamics and Geohazards (S1)
- **GEOL336** Magnatic Systems and Volcanology (S2)
- **GEOL355** Geology of New Zealand (S2)
- **GEOL357** Topics in New Zealand Geology (S2)
- **BIOL334** Evolutionary Genetics and Genomics (S2)
- **BIOL371** Evolutionary Ecology (S1)
- **BIOL384** Marine Ecosystems (S2)
- **GEOL337** Geothermal and Ore Exploration (S1)
- **GEOL338** Engineering and Mining Geology (S2)

**Also recommended:**

- **STAT101** Statistics 1 (S1, S2 or SU)
- **Biol112** Ecology, Evolution and Conservation (S2)
- **BIOL113** Diversity of Life (S1)
- **BIOL209** Biological Data Analysis (S1)
- **BIOL215** Origins and Classifications of Life (S2)

**You may also like:**

- **GEOL113** GeoHazards (S2)
- **BIOL111** Cellular Biology and Biochemistry (S1)
- **ANTA103** Antarctica: Life in the Cold (S2)
- **ENGL117** Writing for Academic Success (S1, S2 or SU)
- **SCIM101** Science, Māori and Indigenous Knowledge (S2)
- **BIOL210** Vertebrate Biology (S2)
- **BIOL212** Marine Biology and Ecology (S1)
- **BIOL270** Ecology (S1)
- **BIOL271** Evolution (S1)
- **BIOL272** Principles of Animal Behaviour (S2)
- **GEOL246** Earth Surface Dynamics (S2)
- **BIOL320** Evolutionary Genetics and Genomics (S2)
- **BIOL371** Evolutionary Ecology (S1)
- **BIOL384** Marine Ecosystems (S2)
- **GEOL337** Geothermal and Ore Exploration (S1)
- **GEOL338** Engineering and Mining Geology (S2)

The Science Student Advisor and Undergraduate Level Coordinators are available to help you plan your degree.

**Recommended at 400 level for this pathway:**

- **GEOL481** Applied Paleobiology (S1)