



## SAMPLE COURSE OUTLINE

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**EARTH AND ENVIRONMENTAL SCIENCE**  
**ATAR YEAR 11**

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## Sample course outline

### Earth and Environmental Science – ATAR Year 11

#### Unit 1 – Earth systems

##### Semester 1

Week	Key teaching points
1	<b>Development of the geosphere</b> <ul style="list-style-type: none"> <li>Earth's structure and evidence for this</li> </ul>
2–3	<ul style="list-style-type: none"> <li>Principle of Uniformitarianism</li> <li>relative geological timescales</li> <li>absolute geological timescale</li> </ul>
4–5	<ul style="list-style-type: none"> <li>rock cycle</li> <li>mineral characteristics</li> </ul>
6–7	<ul style="list-style-type: none"> <li>sedimentary structures</li> <li>strike and dip</li> <li>identification of sedimentary rocks</li> <li>soil composition and formation</li> </ul>
8	<ul style="list-style-type: none"> <li>field investigation, data collection and report writing</li> </ul>
9–10	<b>Development of the atmosphere and hydrosphere</b> <ul style="list-style-type: none"> <li>formation of the atmosphere</li> <li>structure of the atmosphere</li> <li>formation of the hydrosphere and water cycle</li> </ul>
11–12	<b>Development of the biosphere</b> <ul style="list-style-type: none"> <li>origin of life on Earth</li> <li>interactions of the atmosphere, geosphere, hydrosphere and biosphere</li> <li>fossil record and past environments; index fossils</li> </ul>
13–14	<ul style="list-style-type: none"> <li>changes in organisms and communities over time inferred from the fossil record</li> <li>evidence in the fossil record for extinction of organisms</li> <li>analysis techniques of fossil evidence for evolution</li> <li>understanding of Earth's history requires the integration of multiple science disciplines</li> </ul>
15	Revision
16	Semester 1 examination

## Sample course outline

## Earth and Environmental Science – ATAR Year 11

## Unit 2 – Earth processes

## Semester 2

Week	Key teaching points
1–3	<b>Earth processes</b> <ul style="list-style-type: none"> <li>• energy transformations</li> <li>• Earth processes require energy</li> <li>• energy source for tectonic plate movement</li> <li>• the origin of igneous rocks and volcanoes, the age of the Earth and plate tectonics</li> <li>• identification of igneous rocks</li> </ul>
4–6	<b>Atmospheric processes</b> <ul style="list-style-type: none"> <li>• transfer of solar energy to Earth’s surface</li> <li>• the naturally occurring Greenhouse Effect</li> <li>• systematic atmospheric circulation</li> </ul>
7–9	<b>Ocean processes</b> <ul style="list-style-type: none"> <li>• the global ocean conveyer model</li> <li>• the interaction between Earth’s atmosphere and ocean; El Niño and La Niña phenomena</li> <li>• analysis of data reveals patterns</li> </ul>
10–11	<b>Energy transfer reactions</b> <ul style="list-style-type: none"> <li>• evaporation and photosynthesis</li> <li>• photosynthesis transforms energy from the Sun into energy for living things</li> <li>• satellite technologies enable the monitoring of primary production (biomass)</li> </ul>
12–14	<b>Biogeochemical processes</b> <ul style="list-style-type: none"> <li>• energy and matter flow through biotic and abiotic components of an ecosystem</li> <li>• human activities influence this flow</li> <li>• Western Australian case study</li> <li>• biogeochemical cycling of matter – nitrogen cycle, carbon cycle</li> </ul>
15	Revision of Units 1 and 2
16	Semester 2 examination