



GEOS3733 / GEOS6733 ENVIRONMENTAL GEOPHYSICS

14-18 OCTOBER 2019
WOMBEGAN KARST CONSERVATION RESERVE, NSW

This 6 unit of credit course is run as a 5-day field class during week 5 of Term 3. We will be based at Wombeyan Karst Conservation Reserve, in country NSW.

Accommodation is in the Wombeyan Caves dormitories, and food will be self-catering. Students will be asked to make their own way to and from the fieldclass by car (help with car-shares will be provided). There will be a small course charge (around \$65) to cover the cost of accommodation. Numbers are capped to 30. Places are still available. There are no course prerequisites.

This year there is a timetable clash with GEOS3171 Earth Structures and you cannot take both courses.

The course assessments are designed to help spread the assignment burden across the trimester: (1) a guided literature review, due before the fieldclass (end of week 4; 40%); (2) a group presentation on the fieldclass (20%); (3) a field report (40%, due by the end of trimester but could be completed anytime after the fieldclass).

This course aims to provide skills required in research and consulting environments in hydrology, hydrogeology, climatology and environment sciences.

Each day, you will be given short lectures on the theory behind various environmental geophysical methods used in the analysis of air, water, soil, vegetation or the subsurface. This will be followed by field measurements to enable everyone to get hands-on experience of geophysical techniques. These field sampling campaigns are designed by you, the student groups, strengthening your skills in sampling design, data collection and analysis, and data management.

Methods covered will include a selection of the following environmental geophysical techniques: weather station design and hydrology measurements using geophysical techniques; infra-red measurements of soil and atmospheric carbon dioxide concentrations; x-ray fluorescence analysis of soil mineral properties; optical geophysics, using fluorescence and absorbance, to measure river organic matter water quality; cavity-ringdown and off-axis mass spectrometry measurements for mapping methane and carbon dioxide processes in the landscape.

For more information see:

<http://www.nationalparks.nsw.gov.au/visit-a-park/parks/wombeyan-karst-conservation-reserve>

<http://bees.unsw.edu.au/geos3733>

https://en.wikipedia.org/wiki/Wombeyan_Caves_Road

Any questions: please e-mail course convenor Andy Baker on a.baker@unsw.edu.au