

Academic Promotion Discipline Statement

Discipline area: Agricultural and Environmental Sciences

Discipline: Soil Sciences

Sub Disciplines: Soil Chemistry, Soil Physics, Soil Biology, Land Capability and Soil Productivity

Discipline Overview

Soil Science is an applied science that investigates the chemical, physical and biological attributes of the soil. The expertise in soil science is commonly utilised within agricultural and environmental sciences. It is foundational in the understanding, productivity and health of agricultural and environmental systems.

Soil Science is a mature discipline both within Australia and internationally.

Academics in this discipline typically follow a traditional academic pathway (undergraduate, honours and PhD), but may also have complementary industry experience. Individuals with PhD qualifications in this discipline are easily sourced.

Gender Profile

Profession/Industry Source: Soil Science Australia Membership Survey	40% female / 60% male
Higher Education Sector	Data not currently available
Charles Sturt University	100% male

Discipline Context and Expectations

INDUSTRY ACCREDITATION	The discipline is not subject to accreditation requirements. Subjects in this discipline are predominantly foundational, taught into agriculture and environment courses.
DISCIPLINE PEDAGOGIES	The discipline follows a traditional approach to teaching combined with practical components.
STUDENT PROFILE	<p>Agriculture students are predominately face-to-face, but there is still a large cohort of online students including agriculture, horticulture, and viticulture. The environmental science cohorts are largely taught online. Online students engage in practical elements through residential school.</p> <p>Students are predominately undergraduate students. They are mostly domestic students, and largely drawn from regional areas in Australia.</p>

	<p>The student cohort comprises school leavers and mature age students looking to change careers or to support interests. The gender profile of the cohort is relatively balanced.</p>
STUDENT FEEDBACK/PERFORMANCE	<p>Attrition rates in first year subjects can be high, due to students finding the fundamental science components challenging and team-based learning subject delivery, which impacts the SuES results.</p>
RESEARCH APPROACH	<p>Research is primarily collaborative, typically undertaken in small groups. It can be interdisciplinary and cross-institutional with other government agencies. At Charles Sturt, research in this discipline is applied in nature and involves only quantitative based approaches. There is opportunity in this discipline to take the lead on projects.</p>
PUBLICATION	<p>Publication in peer reviewed Q1 and Q2 journals is the norm for this discipline. Books and book chapters are not common.</p> <p>Peer reviewed journal articles have standing from an academic perspective, however from an industry perspective the focus is on the impact on applied practice. For this reason, national conferences and funding body papers are highly regarded because of the practical impacts across the industry.</p> <p>Word count for publications and journal articles is variable, with the primary focus being quality. The expected average output in this area is generally one to two quality journal articles annually depending on the academic's level.</p> <p>Authorship convention in this discipline dictates the first author is the person who writes the paper while last author is usually the senior researcher. There is no specific order between first and last authors.</p> <p>Single authorship is rare.</p>
CONFERENCES	<p>There is a strong focus on industry conferences and papers in this discipline. Conferences are highly competitive, but can also be by invitation only, eg for example presentation at a Grains Research Development Corporation (GRDC) conference may be linked to funded research projects, or by submission of abstracts. It is normal for academics in this discipline to attend full paper competitive conferences. Invited presentations at such conferences is highly regarded and can precede article submission in peer reviewed journals.</p> <p>Grains Research Development Corporation (GRDC) and Soil Science Australia (SSA), Australia Agronomy (AA) and international conferences are highly regarded.</p> <p>Receiving an invitation to present at Australia Agronomy or international conferences is indicative of high recognition and standing.</p>
GRANTS	<p>In this discipline funding is normally industry-based, including grants from Grain Research Development Corporation (GRDC), Meat and Livestock Australia (MLA), Australian Wool Innovation (AWI), Agri Futures, and Australian Centre for International Agricultural Research (ACIAR). Traditional Australian Research Council (ARC) funding is highly competitive and rare in this discipline.</p> <p>Available funding can range from \$10,000 to multimillion dollar grants. Funding is highly competitive against other government research agencies and other higher education institutions and industry groups. Securing and leading large funding projects is very highly regarded.</p>



HDR SUPERVISION	The expectation in this discipline is for academics to be supervising HDR students. Supervision is primarily inter-disciplinary and applied. There is a range of primary and co-supervision depending on the research being undertaken.
RECOGNITION	Soil Science Society and industry awards are highly regarded.
EXTERNAL ENGAGEMENT	External engagement is important. Building industry partnerships and relationships is integral to the discipline.
PROFESSIONAL REGISTRATION	There is no mandatory professional registration requirement in this discipline. However, academics in this discipline may be members of Soil Science Australia or Agronomy Australia.

Prepared by	Academic Promotion Team	
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