

Geomorphic Analysis of Rivers

LEARN HOW TO ANALYSE AND INTERPRET THE GEOMORPHOLOGY OF RIVERS

SUMMARY

Understanding how rivers respond to natural and human disturbances is essential for their effective management, conservation and rehabilitation. Knowing what riverscapes look like, how they work, how they evolve, and how anthropogenic and climate disturbances affect them over different timeframes helps scientists better read the landscape.

The Geomorphic Analysis of Rivers microcredential will enhance your knowledge of river forms and processes, river behaviour and change, and river evolution – and of the impacts of human disturbance on rivers and sedimentology. You'll first attend an online tutorial introducing you to fluvial geomorphology concepts and river management. The in-person component begins with four days of on campus active learning sessions. You'll then undertake geomorphic analyses of rivers during a four-day field trip.

KEY FEATURES

- **Gain recognition towards further study**
Successfully complete this microcredential and you may receive RPL towards a graduate certificate or diploma.
- **Enhance your employability**
Upskill, reskill and extend your knowledge of river management.
- **Learn from world-renowned experts**
Interact with teachers and colleagues in an active learning environment.
- **Undertake hands-on learning in a real-world setting**
Apply your skills and knowledge during a four-day field trip.

KEY DETAILS



MODE

Online, on campus and off campus



DURATION

Online, self-directed pre-work will be available after 27 November 2023

4-days on campus (North Ryde):

Monday 8 January 2024 – Thursday 11 January 2024

4-day field trip (Hunter Valley):

Friday 12 January 2024– Monday 15 January 2024



LOCATION

- Wallumattagal Campus, North Ryde NSW 2109
- Hunter Valley, NSW



WHO SHOULD ATTEND?

Professionals operating in the river science or environmental management spaces who are looking to upskill or reskill.



LEARN FOUNDATION FLUVIAL GEOMORPHOLOGY
for use in practice



STUDY IN AN ACTIVE LEARNING ENVIRONMENT
designed to foster collaboration and practical learning



BE AN ENVIRONMENTAL CHAMPION
by learning how to analyse and interpret riverscapes

LEARNING OUTCOMES

- Apply your geomorphic knowledge and skills to the characterisation and interpretation of rivers to evaluate their character and behaviour.
- Use a range of historical resources to evaluate the geomorphic impacts of human disturbance and modification of rivers.
- Identify and use appropriate field techniques to measure, analyse and interpret river morphology, behaviour and evolution.
- Demonstrate communication skills using oral, visual and written formats to convey an advanced understanding of scientific information and geomorphic concepts.

WHO YOU'LL LEARN FROM



KIRSTIE FRYIRS – PROFESSOR

Professor Kirstie Fryirs – School of Natural Sciences at Macquarie University and certified geomorphologist – is renowned for her work on fluvial geomorphology and river management. She researches the structure and function of rivers; how they adjust and evolve; how they've been impacted by anthropogenic disturbance; and how geomorphology can best be used in river conservation, recovery and rehabilitation. She also researches how catchmentsediment budgets and (dis)connectivity operate, and how rivers and catchments may respond to future disturbances, particularly floods and droughts.



TIM RALPH – SENIOR LECTURER

Dr Tim Ralph researches the geomorphology of rivers and wetlands in dry landscapes, with extensive work undertaken in the Murray–Darling Basin in Australia, and in Africa. Specifically, he seeks to understand patterns and processes of fluvial landform change, sediment dynamics, aquatic ecosystem function, and interactions between people and rivers/wetlands in the context of long-term landscape evolution and environmental change. He's recognised internationally for his research and involvement with capacity-building programs assessing soil erosion and sediment transport using nuclear techniques with the International Atomic Energy Agency. Prior to his academic appointment, he was a senior environmental scientist with the New South Wales Government.

HOW YOU'LL LEARN

<p>PRE-RECORDED ONLINE TUTORIAL 2 HOURS</p>	<p>Once you receive access to the online learning platform, ProLearn, listen to the pre-recorded online tutorial. This tutorial introduces the microcredential and outlines the arrangements you need to make for both the on-campus days and field trip, including group set-up, accommodation bookings and transport arrangements.</p> <p>The online tutorial also contains a self-directed questionnaire that will establish your level of proficiency in fluvial geomorphology and river management, and help you determine how much pre-microcredential preparation you'll need to undertake. You can do this non-assessable questionnaire in your own time.</p>
<p>ONLINE PRE-MICROCREDENTIAL WORK 6 HOURS</p>	<p>You'll undertake self-directed pre-work via ProLearn. The preparation involves listening to six short webinars and completing reading from the textbook. If you have experience in fluvial geomorphology, this will be refresher material. If not, this material will establish your foundational understanding. The pre-work is compulsory and will be assessed on Day 1 of the on-campus sessions.</p>
<p>ON-CAMPUS SESSIONS 4 DAYS, 9AM – 5PM</p>	<p>You'll undertake activities individually, in small groups and as a class. Each short introduction session is followed by an active learning practical activity that will reinforce your learning.</p>
<p>FIELD TRIP: HUNTER VALLEY 4 DAYS</p>	<p>You'll undertake site assessments and mapping, surveying and sediment analysis to analyse river character, behaviour and evolution in the field. You'll also visit a number of river management sites and discuss the use of geomorphology in river management.</p>

“This microcredential was an excellent opportunity to cover the theory of river geomorphology and then link this with on-ground, hands-on experience in the real world. It's given me a new appreciation of the rivers I work on and around, how they're constantly changing and what I can do to help them recover.”

Andrew Morris
CATCHMENT OFFICER

FIND OUT MORE

microcredentials.mq.edu.au/courses/geomorphic-analysis-of-rivers