

# WATR7600 - Urban futures: delivering water sensitive cities (2 units)

Integration module (Specialisation stream #2: Urban water)

## Module introduction

Challenges confronting cities and towns around the world include climate change, population growth, demographic shifts, ecosystem degradation, resource limitations and evolving societal expectations. These challenges have implications for almost every aspect of water in our urban environments and it is now widely recognised that traditional water systems, based on large-scale centralised infrastructure, are no longer capable of meeting all societal needs related to urban water. In this context, governments, practitioners and scientists are exploring new approaches for the planning, design and management of urban water systems. The concept of a Water Sensitive City has emerged in science, policy and practice in response in Australia and beyond.

*Module developed in collaboration with the Cooperative Research Centre (CRC) for Water Sensitive Cities:*



While there is not yet an example of a Water Sensitive City in the world, the concept is being explored and deepened through research and industry experience. The Cooperative Research Centre (CRC) for Water Sensitive Cities provides a fundamental platform for these activities. This module brings together insights from the CRC program to enable the adoption of water sensitive planning and design principles in support of cities making the transition towards liveable, sustainable, productive and resilient water futures.





IWC Graduates receive a co-badged degree from four leading Australian universities, ranked among the top 1% of the best universities in the world for teaching and research. (QS World University Rankings)

## Module aims

This module envisions and explores a new paradigm for how the hydrological cycle interacts with the urban landscape to support liveable, sustainable, productive and resilient cities. This module aims to provide participants with an interdisciplinary understanding of the interplay between society, technology and urban design to ensure water security, water resource efficiency, waterway health, flood mitigation, public health and amenity. Participants will critically engage with the underlying principles of a Water Sensitive City and examine socio-technical pathways for facilitating its delivery.

## Module delivery

- **Full-time** (on-campus) students, including international students, are required to enrol in the internal offering in Semester 2.
- **Part-time** (external) students are required to enrol in this module in Semester 2. There is no face-to-face part-time intensive for this module and all course content will be delivered via regular on-line sessions throughout the semester.

## Assumed background

The following modules are pre-requisites for this module: 'New perspectives on project management', 'Science of water', 'Water, sustainability and development', 'Water governance and policy'.

## Learning objectives

After successfully completing this module participants are able to:

- Understand current problems and future drivers for hydrological cycle management in cities and appreciate the new water sensitive paradigm
- Unpack the foundations of and interconnections between key elements of a water sensitive city
- Identify and select water technologies and water quality standards for fit-for-purpose water production
- Understand the potential and limitations of green infrastructure in a water sensitive city
- Identify and select water sensitive elements that best fit local biophysical contextual conditions
- Demonstrate knowledge on how urban configuration can influence the climate resilience of cities
- Apply water sensitive urban planning and design principles to enhance cities' ecosystem services
- Apply frameworks to characterise actors and institutions and understand constraints and opportunities for institutional change
- Understand how socio-technical system change can be facilitated through different forms of governance
- Identify and select socio-technical strategies for influencing transition pathways towards a water sensitive city.

## Teaching staff



**Lead Lecturers:** [Dr Annette Bos](#) (Monash University); [Dr Briony Rogers](#) (Monash University)

**Guest Lecturers:** [Prof Tony Wong](#) (CRC for Water Sensitive Cities); [Prof Ana Deletic](#) (Monash University); [Dr David McCarthy](#) (Monash University); [Dr Peter Breen](#) (CRC for Water Sensitive Cities & E2DESIGNLAB).

## Problem-Based Learning (PBL) projects

Parallel PBL projects and field trips run through the semester, comprising roughly 50% of the assessment weight. Full-time students complete two PBL projects per semester, while part-time students complete one PBL per semester.

PBL projects for the Integration semester comprise:

- **PBL3:** Integrated catchment management – developing strategies for change (*Individual project*)
- **PBL4:** Learning lessons from integrated water management in practice (*Individual project*)

## Field trips

As part of this module, students undertake four half-day field trips looking at aspects of urban waterways and water sensitive urban design.

For a complete list of field trips that students undertake during the program, please refer back to "Field trips" on page 5 of this syllabus or visit the [IWC website](#).