



2027 Summer Research Project Template

Section	Description
Project title	Physical modelling of hydraulic structures
Hours & delivery	6 weeks Hours of engagement: 36 hrs per week (11 January to 19 February 2027). Project on site at UQ St Lucia campus
About the project (150–250 words)	Theoretical and numerical studies of turbulent flows in hydraulic structures are complicated by the large number of relevant equations: i.e., three basic equations (continuity, momentum, energy), plus a mass transfer equation. Most studies rely upon some physical experiments with sophisticated instrumentations.
What you'll do (100–150 words)	The student(s) will conduct some research experiments under academic supervision in a world-known research laboratory. Laboratory model studies are performed under controlled flow conditions with geometrically similar models. Hydraulic investigations will be conducted in the AEB hydraulics laboratory to predict the hydrodynamic performances of man-made structures. The project will aim to characterise the turbulence and the effects of flow turbulence on the optimum flow conditions.
What you'll learn (100–150 words)	They/he/she will gain skills in modelling and data processing, together with some critical analysis of the results.
Project outcomes (75–125 words)	Student(s) may also be asked to produce a report or oral presentation at the end of the project.
Who should apply? (75–125 words)	Civil and Environmental Engineering students who successfully the completed courses in Fluid Mechanics (UQ equivalent: CIVL2131), and Open Channel Hydraulics (UQ equivalent: CIVL3155). Preferably the applicant(s) is(are) likely to undertake a CIVL4580/4582 Research thesis or CIVL4560 Project in 2027, starting in semester 1. Preference will be given to highly motivated students.
Team & supervision (75–125 words)	Professor Hubert Chanson The project is a hands-on in-person experimental study full-time for the duration of the project. The physical location is the AEB Hydraulics laboratory on the St Lucia campus of the University of Queensland.
Additional opportunities (optional)	This project provides an unique opportunity to conduct physical modelling of hydraulic structures in a world-class facility.
Additional requirements (if applicable)	Project for UQ enrolled student, who successfully the completed courses in Fluid Mechanics (UQ equivalent: CIVL2131), and Open Channel Hydraulics (UQ equivalent: CIVL3155), and preferably will undertake a CIVL4580/4582 Research thesis or CIVL4560 Project in 2027, starting in semester 1.
Contact	(Yes/ No), students (may/ may not) contact the supervisor before applying. Direct enquiries to: Professor Chanson (h.chanson@uq.edu.au)