

WORKSHOP FORMAT

The workshop comprises:

1. Pre-Workshop **ARR 2019** E-Learning Seminar, covering an overview of the guidelines applied to Urban Drainage including new ARR probability terminology, the Initial Loss Continuing Loss (IL-CL) hydrological model, obtaining IFDs from the Bureau of Meteorology, ensembles of temporal patterns, IL-CL losses, pre-burst depths and climate change factors from the ARR Data Hub, applying these to DRAINS, and the Regional Flood Frequency Estimation Model (RFFE).
2. A two-day **DRAINS** workshop commencing with an introduction to DRAINS, hydrological models including IL-CL, Horton ILSAX and Storage Routing models (RAFTS, RORB & WBNM), covering correct setup of a DRAINS model, customising the pit, pipe & overflow route databases, advanced design techniques for street drainage and detention systems, all presented through a practical mix of theory and hands on modelling.
3. Coupon providing 90 days free access to the DRAINS E-Learning platform to re-watch or refresh on the full course material covered during the face-to-face workshop.

COURSE CONTENT

- Pre-seminar covering an overview of the ARR 2019 guidelines, terminology & procedures;
- 2016 IFDs from the Bureau of Meteorology (BoM) and ensembles of temporal patterns, losses, median preburst depths & climate change factors from the ARR Data Hub;
- Introduction to the DRAINS interface, the operation of DRAINS, and design procedures;
- Step-by-step construction of a DRAINS model using the ARR 2019 design procedures;
- Configuration of various hydrological models including IL-CL, Horton ILSAX, Storage Network Routing Models (SNRM – RORB, RAFTS & WBNM) and calculating Probable Maximum Precipitation (PMP);
- Modelling gauged rainfall data and probable maximum precipitation;
- Stormwater drainage system characteristics, design principles, methods, and tools;
- Flow times, calculating pit inlet capacities, estimating and revising pit loss coefficients, and exploring various utility spreadsheets;
- Customising the DRAINS Pit, Pipe & Overflow Route databases for your project;
- Overflow route flood mapping;
- A review of capabilities and components of DRAINS with a greenfield design example and exercise;
- Overview of data exchange with other software - Civil Site Design (www.civilsurveysolutions.com.au);
- Design optimisations of greenfield DRAINS designs;
- Applying the Full Unsteady (formerly premium) hydraulic model in DRAINS;
- Detention basin design and analysis, including modelling complex arrangements with the use of multi-staged orifices, weirs & pumps;
- Modelling pits with diversion chambers, weirs and GPTs;

VENUE

Training Facilities

Refer to website for location specific details

PRESENTER



Dr. Benjamin Kus, Lead presenter of the DRAINS workshops with more than 15 years of consulting engineering experience, a published author in international journals, and a contributing author of the ARR 2019 Guidelines.

WORKSHOP FEES & DATES

2-Day DRAINS Workshop, with ARR 2019 pre-seminar:

\$1,980 inc GST per person

Including:

- Full day catering with café lunch, tea & coffee
- Training PC & DRAINS Licensing
- Printed Workshop Notes & USB flash drive
- Certificate of Completion with 18 hours CPD
- 90 days access to DRAINS E-Learning – covering the full workshop on-demand, useful to re-watch as a refresher

THE SOFTWARE – Watercom DRAINS

Over 1000 Australian organisations have purchased DRAINS since 1998. The program is compliant with ARR 2019 rainfall inputs and design procedures. This software offers:

- Design and analysis procedures for urban drainage systems using initial and continuing loss model (IL-CL), ILSAX, rational method and storage routing hydrology with unsteady flow hydraulics;
- Connections to spreadsheet, CAD and GIS programs, Civil Site Design, Civil 3D, Tuflow and 12d;

- An effective user interface, Help system, manual, design data for inlet pits, a free Viewer; and
- Responsive support and regular training.

You can download a demonstration version of DRAINS, from www.watercom.com.au. Contact Watercom Support at info@watercom.com.au or (02) 6649 8005 for further information.