



Attention water resources professionals, regulators, consultants, academics, and practitioners: Save the dates for an intensive, interactive course covering the full range of hydrology and hydraulics:

**Learn rainfall-runoff  
and flood routing**

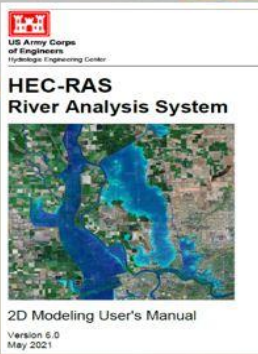
**HEC-HMS**

**Build, run, and animate  
1D and 2D flood models**

**HEC-RAS**

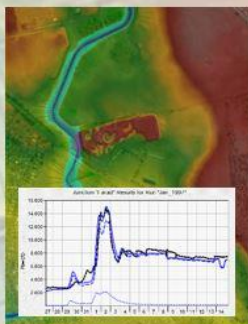
**Master free software in this intensive, interactive course**

**Auckland 8-12 April 2024**



**Registration forms  
below**

- Rainfall Runoff
- Hydraulic Structures
- Flood Mapping
- Risk Assessment
- GIS Interfacing
- Output Animations
- ★ Professional Membership Discounts
- ★ Academic and Group Rate Discounts
- ★ Professional Development Certification

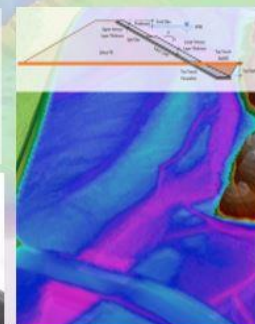


Dr. Steven Joynes, Golovin

Steven has over 30 years' experience in rainfall runoff modelling, hydraulic design, and flood mapping. He has conducted HEC-HMS and HEC-RAS training courses in New Zealand since 2011.

Key Price, Surface Water Solutions

Key is a civil engineer with a 20-year, international career focussed on river mechanics and hydraulic modelling. Key has led over 200 worldwide HEC-RAS training courses.



- Day 1 Monday 8 April: HEC-HMS Essentials
- Day 2 Tuesday 9 April: HEC-HMS Advanced
- Day 3 Wednesday 10 April: HEC-RAS Essentials
- Day 4 Thursday 11 April: HEC-RAS Advanced
- Day 5 Friday 12 April: Special Workshops



**Monday 8 April**  
**HEC-HMS Essentials**

**Tuesday 9 April**  
**HEC-HMS Advanced**

**Wednesday 10 April**  
**HEC-RAS Essentials**

**Thursday 11 April**  
**HEC-RAS Advanced**

**Friday 12 April**  
**Special Workshops**

**Schedule and pricing:**

Day	Course	Daily Price	HEC-HMS or HEC-RAS Price	HEC-HMS and HEC-RAS Price
1	HEC-HMS Part 1	\$900	\$ 1,600	\$ 2,900
2	HEC-HMS Part 2	\$900		
3	HEC-RAS Part 1	\$900	\$ 1,600	
4	HEC-RAS Part 2	\$900		

Note: Day 5 special workshop content and pricing subject to attendee expressions of interest.

Registration discounts are available for multiple courses, multiple registrants from a single organisation, and members of professional organisations (NZSOLD, NZHS, and Engineering NZ). Previous course attendees can qualify for additional discounts. Details must be provided when requesting a discount.

Please direct pricing enquiries to [steven@golovin.co.nz](mailto:steven@golovin.co.nz).

## Contents:

### DAY 1 Monday 8 April 2024:

#### HEC-HMS Essentials

- Review of TP108
- Overview of Precipitation-Runoff Processes
- Basin Precipitation
- Rainfall Loss Rates Computation
- Channel Routing
- Multiple catchment and stream modelling
- Basin Model Manager
- Meteorological Model Manager
- Control specifications and time-series data
- Conducting simulation runs

### DAY 2 Tuesday 9 April 2024:

#### HEC-HMS Advanced

- Using GIS tools in HEC-HMS
- Shared component data
- Gridded boundary condition data
- Model calibration
- Using 2D Flow in HEC-HMS
- Working with Depth-Area Analysis
- Working with Optimisation Trials
- Working with Time Series Results
- Exporting results for use in HEC-RAS
- Creating a basin map

### DAY 3 Wednesday 10 April 2024:

#### HEC-RAS Hydraulics Essentials

- File management with HEC-RAS
- RAS Mapper and GIS interfacing
- Importing terrain files
- Setting up a 1D network
- Entering reach data
- Entering cross sectional data
- Entering roughness data
- Junctions
- Bridges and culverts
- Steady and unsteady flow
- Executing plan files
- Floodplain analysis
- Interpreting and checking results

### DAY 4 Thursday 11 April 2024:

#### HEC-RAS Hydraulics Advanced

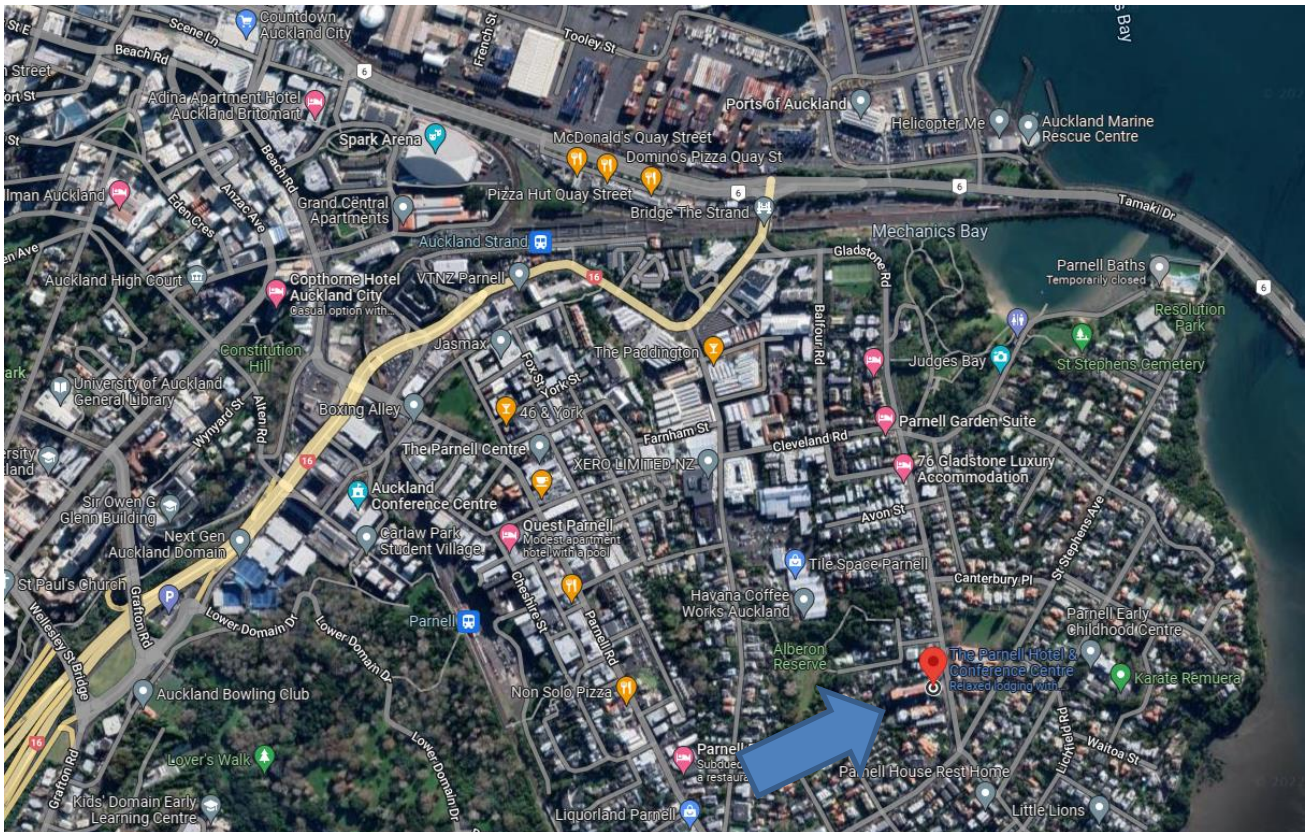
- Computational mesh generation
- Creating 2D areas
- Hydrologic boundary conditions
- Time step selection
- Entering unsteady flow data
- Computational options and tolerances
- Setting up plan files
- Adding internal structures
- Breaching dams and lateral weirs
- Viewing and exporting in RAS Mapper
- Troubleshooting models
- Calibrating models
- Building your own model from scratch

All course days run from 9.00 am to 4:30 pm

Certification of professional development hours available to all attendees

## Location:

Quality Hotel Parnell  
10/20 Gladstone Road  
Parnell, Auckland 1052  
+64 20 7365 0519



## Registration Details

Organisation

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Postal Address

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Email contact

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Dietary requirements

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Course	Date	Attendees Name	Fee (\$)
	Discounts		
	Sub-total		
	GST		
	<b>TOTAL TO PAY</b>		

## Method of Payment

Invoice Me (purchase order or reference required)

Register by email to [steven@golovin.co.nz](mailto:steven@golovin.co.nz)

## Terms and Conditions

1. Registration is by 1<sup>st</sup> in - 1<sup>st</sup> paid basis.
2. If you cannot attend a course, a substitute participant is welcome.
3. If you withdraw from a course in writing or email more than 20 working days prior to the course, you will receive a full refund less a \$50 administration fee.
4. If you withdraw with 10 working days' notice, you will receive a 50% refund.
5. After this, if you do not attend the course there is no refund.
6. If a course is rescheduled or cancelled due to lack of numbers, or any other valid reason, you will be advised 10 working days before the course and your course fee will be refunded in full.
7. Participants are responsible for their own travel/accommodation bookings and no compensation will be made should the course be rescheduled or cancelled.
8. Participants must bring their own laptop. Install HEC-HMS and/or HEC-RAS and test the software prior to attending the course. Download links will be provided to all registrants.
9. To hire a laptop pre-loaded with all required software and tutorials for \$50 per day, please contact [steven@golovin.co.nz](mailto:steven@golovin.co.nz).

### Authorisation Signature

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

## Expression of Interest for Special Workshops on Day 5

I would be interested in more information about attending a special workshop on Day 5,  
Friday 12 April 2024:

- Advanced hydraulic structures
- Dam breach
- Optimisation and uncertainty analyses
- Flood frequency analyses
- Rating curves