

**Learn rainfall-runoff  
and flood routing**

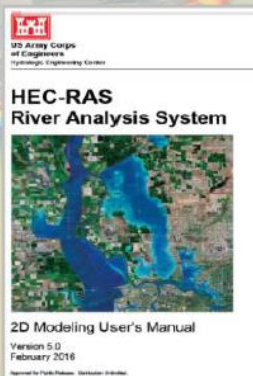
**HEC-HMS**

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

**HEC-RAS**

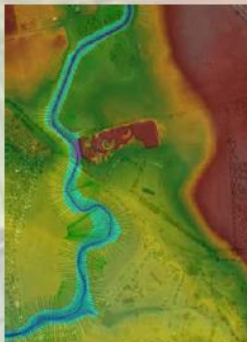
**Master free software in this intensive, interactive course**

**Auckland 11-14 June 2018**



**Register at  
www.surfacewater.biz**

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

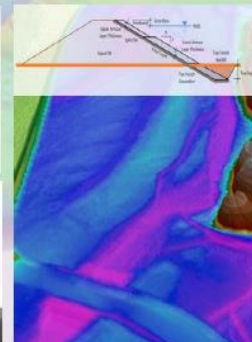


**Day 1-2 Instructor: Dr. Steven Joynes, Golovin**

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.

**Day 3-4 Instructor: Krey Price, SWS**

Krey is a civil engineer with a 20-year, international career focussed on river mechanics and hydraulic modelling. Krey has trained over 400 HEC-RAS 2D course attendees since the release of Version 5.0.



- Day 1 Monday 11 June: **HEC-HMS Rainfall-Runoff**
- Day 2 Tuesday 12 June: **HEC-RAS 1D Hydraulics**
- Day 3 Wednesday 13 June: **HEC-RAS 2D Model Setup**
- Day 4 Thursday 14 June: **HEC-RAS 2D Model Results**

**GOLOVIN**  
INTELLIGENT MODELLING FRAMEWORK

**Pricing: \$750 per day  
or \$2,000 for the  
full 4-day course**

**Queries: info@surfacewater.biz**

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

The course will be held from 11 June to 14 June 2018 and will consist of 4 modules across 4 days:



### Pricing:

Day			Subject	Instructor	Facilitator	Registration Fee		
						1-Day	2-Day	4-Day
Day 1	Mon	11-Jun	HEC-HMS	Steven Joynes Golovin	Krey Price	\$750	\$ 1,350	\$2,000
Day 2	Tue	12-Jun	HEC-RAS 1D		Sfc Wtr Solutions	\$750		
Day 3	Wed	13-Jun	HEC-RAS 2D Pt 1	Krey Price	Steven Joynes	\$750		
Day 4	Thu	14-Jun	HEC-RAS 2D Pt 2	Sfc Wtr Solutions	Golovin	\$750		

Registration discounts are available for previous course attendees, multiple registrants from a single organisation, and members of selected professional organisations, including ANCOLD, NZSOLD, EA, and IPENZ. Please [enquire](#) for coupon codes to apply at checkout.

## Contents:

### **DAY 1 Monday 11 June:**

#### **HEC-HMS Rainfall-Runoff**

**Instructor: Steve Joynes, Golovin**

**Facilitator: Krey Price, Surface Water Solutions**

- Review of TP108
- Overview of Precipitation-Runoff Processes
- Basin Precipitation
- Rainfall Loss Rates Computation
- Channel Routing
- Multiple catchment and stream modelling
- Basin Model Manager
- Meteorologic Model Manager
- Control specifications and time-series data
- Conducting simulation runs
- Data interpretation and calibration
- Exporting results for use in HEC-RAS

### **DAY 2 Tuesday 12 June:**

#### **HEC-RAS 1D Hydraulics**

**Instructor: Steve Joynes, Golovin**

**Facilitator: Krey Price, Surface Water Solutions**

- File management with HEC-RAS
- Setting up a 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 1D results
- Exporting results for use in HEC-RAS

### **DAY 3 Wednesday 13 June:**

#### **HEC-RAS 2D Hydraulics Part 1**

**Instructor: Krey Price, Surface Water Solutions**

**Facilitator: Steve Joynes, Golovin**

- RAS Mapper and GIS interfacing
- Importing terrain files
- Computational mesh generation
- Creating 2D areas
- Hydrologic boundary conditions
- Time step selection
- Entering unsteady flow data
- Computational options and tolerances

### **Thursday 14 June:**

#### **HEC-RAS 2D Hydraulics Part 2**

**Instructor: Krey Price, Surface Water Solutions**

**Facilitator: Steve Joynes, Golovin**

- Setting up plan files
- Adding internal structures
- Breaching dams and lateral weirs
- Viewing and exporting in RAS Mapper
- Troubleshooting models
- Calibrating models
- Benchmarking HEC-RAS vs. other models
- Building your own model from scratch

All course days run from 8:30 am to 5:00 pm

Certification of professional development hours available to all attendees

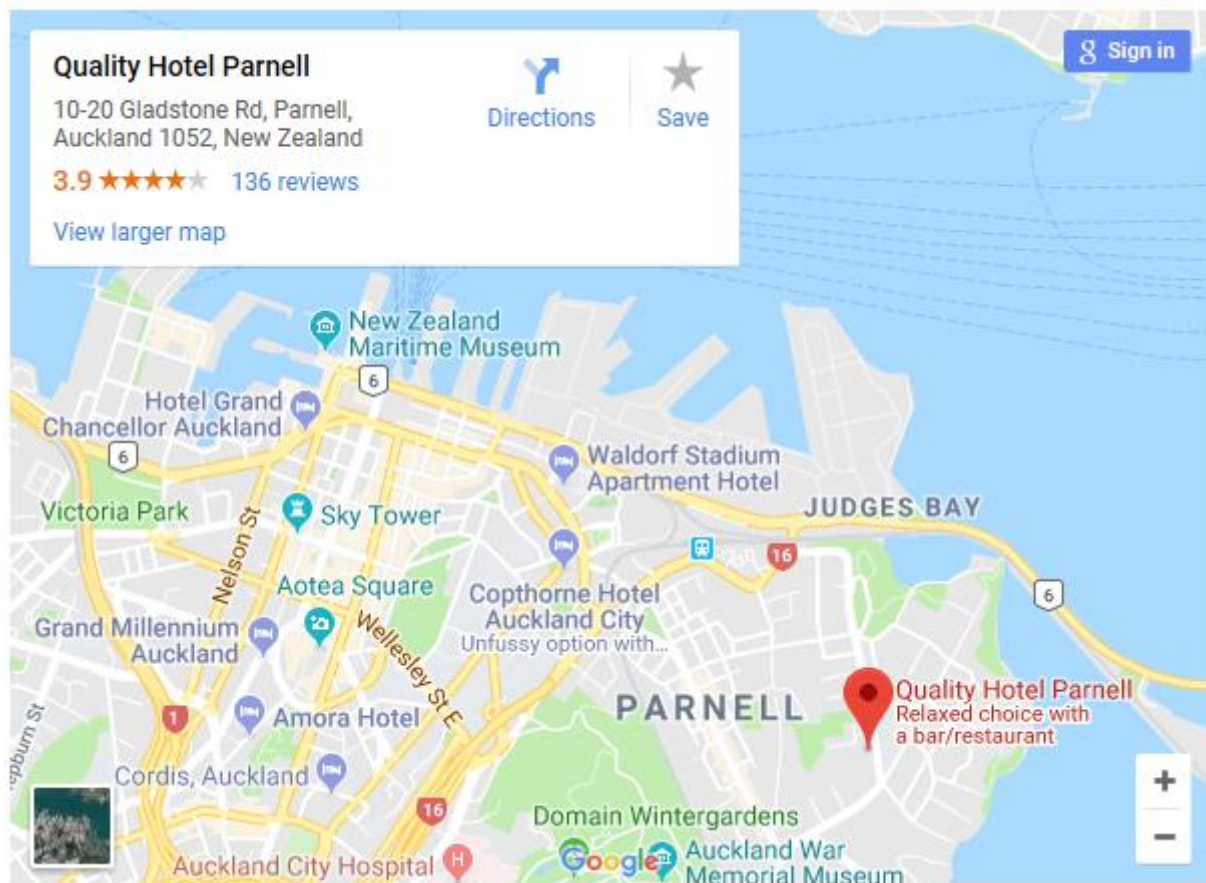
Certification of continuing professional development hours will be provided to all course attendees.

## Location:

Quality Hotel Parnell

10-20 Gladstone Road, Parnell

Auckland 1052 New Zealand



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## 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>		

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## Method of Payment

☐ Invoice Me (purchase order or reference required)

☐ If you are based in Australia you can pay by credit card.  
Email [hec-ras@surfacewater.biz](mailto:hec-ras@surfacewater.biz)

Register by **email** to [steven@golovin.co.nz](mailto:steven@golovin.co.nz) or **post** to P O Box 5545, Hamilton 3242

## 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 bringing their own laptop should 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 [hec-ras@surfacewater.biz](mailto:hec-ras@surfacewater.biz).

### Authorisation Signature

Name \_\_\_\_\_

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