

Program



NATIONAL CENTRE FOR
GROUNDWATER
RESEARCH AND TRAINING

Australian Groundwater School – Perth
Adina Apartments (33 Mounts Bay Road)
Monday 4 December 2017

TIME		THEME/TOPIC	PRESENTERS
8.30am		Registrations and Coffee	
8.45am		Welcome and Introduction	
9.00am	1	The Importance of Groundwater In Australia <ul style="list-style-type: none"> • What is groundwater • Where is groundwater found? • The hydrologic cycle • What is hydrogeology and its history? • Australian groundwater facts and figures • Australian aquifer map. sedimentary basin/fractured province, inset on map 	
10.00am	2	Introduction to Hydrogeology <ul style="list-style-type: none"> • Water table and capillary zone • Aquifers & aquitards 	
11.30am		Morning Tea	
11.45am	3	Introduction to Groundwater Hydraulics <ul style="list-style-type: none"> • Groundwater flow systems • Storage in aquifers • Hydraulic Head • Physical & hydraulic parameters 	
12.45pm		Lunch	
1.45pm	4	Groundwater Hydraulics <ul style="list-style-type: none"> • Groundwater flow equations • Borehole pumping test • Single borehole test • Lab measurements of hydraulic conductivity 	
3.00pm		Afternoon Tea	
3.15pm	5	Drilling Methods and Bore Design <ul style="list-style-type: none"> • Types and purposes of various bores • Drilling methods • Databases in Australia • Methods, variability & limitations of data collection 	
5.15pm		End Day 1	
4.40pm		Networking Drinks	

Australian Groundwater School – Perth
 Tuesday 5 December 2017

TIME		THEME/TOPIC	PRESENTERS
9.00am	6	Groundwater Modelling <ul style="list-style-type: none"> • What is a model and what is its purpose? • Modelling groundwater flow • Modelling process • Groundwater modeling codes Groundwater Modelling Application <ul style="list-style-type: none"> • Modelling guidelines • Limitations and pitfalls in modelling • Modelling case study • Management, regulatory issues 	
11.00am		Morning Tea	
11.15am	7.1	Tutorial, Part 1 <ul style="list-style-type: none"> • Interpreting hydrographs • Developing groundwater contours • Borehole test for hydraulic conductivity • Contaminant transport 	
1pm		Lunch	
1.45pm	7.2	Tutorial, Part 2 <ul style="list-style-type: none"> • Water budgeting • Estimating groundwater flow • Hydrostratigraphic conceptualisation 	
3.15pm		Afternoon Tea	
3:30pm	8	Geophysics <ul style="list-style-type: none"> • Surface, airborne, borehole • Methods and data processing and interpretation • Hydrologic properties derived from geophysics 	
4.30pm		End Day 2	

Australian Groundwater School – Perth
 Wednesday 6 December 2017

TIME		THEME/TOPIC	PRESENTERS
9.00am	9	Surface Water – Groundwater Interactions <ul style="list-style-type: none"> • Introduction to surface water hydrology • Locations and modes of interaction between surface water and groundwater • Water balance • Human impacts • Recharge/discharge definitions and estimation 	
10.00am	10	Groundwater Replenishment for Public Water Supply <ul style="list-style-type: none"> • Groundwater replenishment trial • Perth Groundwater replenishment stage 1 • Future groundwater replenishment options 	
11.00am		Morning Tea	
11.15am	11	Groundwater Chemistry <ul style="list-style-type: none"> • Why study groundwater chemistry? • Physical and chemical composition of groundwater • Origin of solutes, evolution in groundwater • Field parameters 	
12.15pm	12	Environmental Isotopes in Groundwater <ul style="list-style-type: none"> • What are isotopes and their use? • Types of isotopes, Australian examples 	
1.15pm		Lunch	
2.00pm	13	Groundwater Microbiology <ul style="list-style-type: none"> • Introduction to microbiology • Pathogens in groundwater • Microbial metabolism in groundwater • Bioremediation 	
3.00pm		Afternoon Tea	
3.15pm	14	Groundwater Contamination <ul style="list-style-type: none"> • Introduction and definitions • Sources of contamination • Fate of contaminants in the sub surface • Groundwater remediation 	
4.15pm	15	Salinity and Water Logging <ul style="list-style-type: none"> • What is salinity and why is it a groundwater issue • Primary and secondary salinity & its sources • Dryland and Irrigation salinity, water logging • Impacts and management of salinity 	
5.00pm		End Day 3	

Australian Groundwater School – Perth
 Thursday 7 December 2017

TIME		THEME/TOPIC	PRESENTERS
9.00am	16	Fractured Rock Aquifers <ul style="list-style-type: none"> • Fractured rock provinces in Australia • Classification • Basic Characteristics • Groundwater flow • Locating and mapping fractures 	
10.00am	17	Mining Hydrogeology <ul style="list-style-type: none"> • Mine Dewatering • Dewatering Methods • Impacts of dewatering • Design of dewatering system 	
11.00am		Morning Tea	
11.15am	18	Groundwater Dependent Ecosystems <ul style="list-style-type: none"> • Introduction and definition • Types of GDEs • Hydrogeological framework • Methods and indicators used in the determination of GDEs • Level of dependency 	
12.15pm	19	Groundwater Management <ul style="list-style-type: none"> • What, why, when and how we manage GW? • Principles • Tools for groundwater management • Management issues • Climate change 	
1.15pm		Lunch	
2.00pm	20.1	Groundwater Governance – Water Law <ul style="list-style-type: none"> • Development of water resources law in Australia • Essential aspects of the current legal framework • Groundwater and water trading 	
3.00pm		Afternoon Tea	
3.15pm	20.2	Groundwater Governance – Case Studies	
4.30pm		End of course wrap up and evaluation	
5.00pm		End Day 4	