



## Free Short Course on Bayesian Networks: Modelling and Simulation for Complex Systems with Application to Water Resources

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Sept. 20, 2022

Beginner Course: 10:00 - 12:30

Intermediate: 13:45 - 18:15

Campus Plaza Kyoto (JR Kyoto)

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In 1763 Thomas Bayes proposed the famous “Bayes’ Theorem”, which was applied by Alan Turing to crack the German Enigma code during World War II. Advances in computational capabilities have facilitated applications of Bayesian inference, and the development and application of Bayesian Networks (BN) have dramatically increased. BNs are a modelling and decision-support tool, suitable for applications with uncertain and limited numerical data. BN can be applied in most fields, such as environmental and water resources research projects (evoked in the banner above).

This course will **introduce the principles behind Bayesian Inference and Bayesian Networks**, and provides examples of BN applications to real projects in water resources. Attendees will learn how to develop a basic BN using freely available software programs. **Contents** are outlined on the next page.

The course will be delivered **in English**. Dr. Bertone’s host, Prof. John WELLS (Ritsumeikan University) can assist with **limited translations to/from Japanese** when needed.

Max. 30 attendees. No charge.

Pre-registration required here: <https://forms.gle/Y3ZAShu8hiN4K2f9A>



Organised by Ritsumeikan University

Contact: [jwells “at” se.ritsumei.ac.jp](mailto:jwells@se.ritsumei.ac.jp)

# Bayesian Networks: Modelling and Simulation for Complex Systems with Application to Water Resources

## *Course contents*

### **Beginner Course:**

- Introduction to Bayesian inference and Bayesian Networks
- Advantages of applying Bayes' Theorem
- Bayesian Networks in action: Case study examples
- BN: structural properties and idioms

### **Intermediate Course:** Bayesian Network development

- Introduction to software
- Model building

If you want to register only for the Intermediate Course, please email Dr. Bertone first to confirm that you have sufficient prerequisite knowledge.

Contact for inquiries concerning course contents: Dr. Bertone e.bertone "at" griffith.edu.au

Participants should bring a laptop PC, with the free version of Netica downloaded:

<https://www.norsys.com/download.html>