



Lectures on Frontiers of Economics

January 9 to 13, 2006 at The Australian National University.

Stochastic Economic Dynamics



The course

This mini course provides core techniques necessary to understand, develop and solve macroeconomic models typified by dynamic, stochastic, general equilibrium environments. Mathematical analysis and computational solution methods will be developed side by side.

Invited speaker

[John Stachurski](#) is currently an Australian Research Council Postdoctoral Fellow at the University of Melbourne. His research interests are in stochastic dynamics (stability, estimation, optimization), economic development and growth, and also statistical learning theory. He has published in the *Journal of Economic Theory*, *Journal of Mathematical Economics*, and *Economic Theory*. He also collaborates with other economists such as Kazuo Nishimura (Kyoto) and Costas Azariadis (UCLA).

<http://ecocomm.anu.edu.au/MSG/sed.htm>

```
bellman = function(w) {  
  Tw = numeric(); running_max = -Inf  
  for (j in 1:length(state)) {  
    for (k in Gamma(j)) {  
      m = r[j, k] + RHO * w %*% M[j, k,]  
      if (m > running_max) running_max = m  
    }  
  }  
}
```

$$\frac{1}{n} \sum_{t=1}^n h(X_t) \rightarrow \sum_{s \in S} h(s) c^s(s) \quad \text{as } n \rightarrow \infty$$

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