

**National University of Singapore**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**CS5239 Computer System Performance Analysis**  
**2009/2010 - Semester II**  
<http://www.comp.nus.edu.sg/~teoym/cs5239-10/>

**Associate Professor Teo Yong Meng**  
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Lecture: **Wed, 6.30pm, COM1/204**; Consultation hours: **Wed, 9-11am**

### **Description**

This course aims to provide students with a working knowledge of computer performance evaluation. It covers fundamental techniques such as measurement and mathematical modeling. The module is divided into four main parts: capacity planning, measurement techniques and tools, analytic modeling techniques and case studies.

Topics include: performance analysis overview; capacity planning; measurement techniques and tools covering performance metrics, workload characterization, instrumentation; analytical modeling techniques covering operational analysis, stochastic queuing network analysis, performance of client-server architectures, principles of scalable performance; case studies

### **Main Textbooks**

- *The Art of Computer Systems Performance Analysis: Techniques for Experimental Design, Measurement, Simulation and Modeling*, R. Jain, John-Wiley, 1991 [Jain91].
- *Quantitative System Performance*, E.D. Lazowska et al., Prentice-Hall, 1984, out of print but available at <http://www.cs.washington.edu/homes/lazowska/qsp/> [Lazowska84].
- *Measuring Computer Performance – A Practitioner’s Guide*, D. J. Lilja, Cambridge University Press, 2000 [Lilja00].

### **Reference Books**

- *Capacity Planning and Performance Modeling - From Mainframes to Client-Server Systems*, Daniel A. Menasce, et al., Prentice-Hall, 1994 [Menasce94].
- *Capacity Planning for Web Performance – Metrics, Models & Methods*, D.A. Menasce, et al., Prentice-Hall, 1998 [Menasce98]
- *Introduction to Parallel Computing*, A. Grama, et al., Addison-Wesley, 2<sup>nd</sup> Edition, 2003. [Grama03]

### **Module Assessment:**

- continuous assessment - 60%
- final examination - 40% (open book exam)

**Course Schedule:** Please refer to course webpage for latest version.

### **Remarks**

If you have any questions or suggestions, please feel free to approach me.