

# 1. Introduction to Problem Solving with Computers

Frank Stephan and Thomas Kister

GEM 1501 - Overview

## Lecturers

In 2014, the lecturers are Frank Stephan (fstephan@comp.nus.edu.sg) and Thomas Kister (thomas.kister@nus.edu.sg).

Stéphane Bressan is teaching the same course in other years and the slides have been made jointly with him.

## Method

We follow a principled approach, augmented with practical programming exercises (programming in JavaScript) to study algorithms and the possibilities and limitations of computers. The course will include concepts and formalisations of the notion of tasks (problems) to be solved as well as of methods (computational tools) to solve such problems.

## Syllabus

- Computers
- Programming (with JavaScript)
- Problems
- Algorithmic methods
- Sorting
- Efficiency and Tractability
- Decidability and Computability
- Parallelism
- Randomness



## Resources

<http://www.w3schools.com>

- HTML: <http://www.w3schools.com/html>
- JavaScript: <http://www.w3schools.com/js>
- Own Resources: <http://www.comp.nus.edu.sg/~gem1501/javascriptintroduction.html>

## Workload

- 2 hours of lecture hours per week
- 2 hours of lab hours per week
- 4 hours for projects, assignments, fieldwork etc per week
- 2 hours for preparatory work by a student per week

## Time Table

- The lecture is on Thursdays, 12.00-14.00 in Video Conference Room of School of Computing
- The laboratory sessions are on Fridays. There are two groups: 12.00-14.00 and 14.00-16.00 in Programming Lab 5 (COM1#B1-10, bring your Student Card to enter the laboratories). The laboratory sessions start in Week 4 (07-Feb-2014)
- The project starts in Week 4 (07-Feb-2014)

## Grading

- Final examination (Monday, 07-May-2014, morning): 50%
- Continuous assessment: 50%
  - Midterm test 1 (Thursday, 20-Feb-2014): 10%
  - Midterm test 2 (Thursday, 27-Mar-2014): 10%
  - Laboratories: 20% (deadline for presenting assignments
    - 0 to 5, Friday, 21-Feb-2014,
    - 6 to 16, Friday, 20-Mar-2014,
    - 17 to 19, Friday, 11-Apr-2014)
  - Project: 10% (presentation in Week 13)



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