1 Instructor

- Tom Milac
- tel: 616-3891
- email: milac@amath.washington.edu
- http://www.amath.washington.edu/~milac
- 214 Cunningham Hall
- Office hours: TBA
- Not available Tuesdays and Thursdays

2 Teaching assistant

- Sasha Aravkin
- aleksand@math.washington.edu
- Padelford C113
- Office hours: TBA
- Attending conference until July 1
- Submit computer codes to Sasha via email

3 Topics

- *Surface growth models*: deposition of molecules onto a surface, e.g. semiconductor manufacture.
- *Markov chains*: Google's PageRank algorithm.
- *Biological sequence analysis*: Needleman-Wunsch global alignment algorithm.
- *Graph theory and networks*: Dijkstra's shortest path algorithm. Small world effect.

4 Textbook

No textbook. Overheads available on the course website (username is "381", password is "model").

5 Class schedule

- No class on Monday, July 3 (July 4 holiday).
- Conference in August - 1 day.
- Occasional tutorial sessions to help with homework instead of lectures.

6 Homework

- A hard copy of the homework solution must be submitted **before the start of class** on the due date. The first homework is due on Friday, 7/7. **No late homeworks will be accepted.**
- Your computer codes along with a brief message indicating how to run them (if it is not obvious) must be submitted to Sasha via email by 6:00PM on the due date.
- Homework must be typeset in the form of a report.
- Your report must be clearly written and include graphics, etc. as necessary.
- You may consult with one another but **you must submit independently produced writeups and computer codes**.

7 Evaluation

- Four homeworks; each will involve significant computing.
- No exams.
- This is a "W" course; clarity of expression and presentation count.
- Each homework will be assigned a separate grade for analysis, coding and writing (which includes clarity and organization).
- A grade of 0-5 will be assiged in each category:
  - 5 = excellent.
  - 4 = very good.
  - 3 = good.
  - 2 = ok.
  - 1 = pass.
  - 0 = not acceptable.
- The grade in each category will be weighted. For HW#1, weights are coding = 50%, analysis = 25% and writing = 25%.

8 Course "philosophy"

- Computing is essential to (modern) modeling.
- Analysis is essential, in particular to validating computations.
- Communications is essential to everything.

9 Computer issues

- Computer access?
- Computer languages: C, C++, Java, and Matlab
- Graphics: Matlab, Mathematics, SPlus, Excel ... ?
- Typesetting: LaTeX, Word ... ?