

Parallel Computing for Partial Differential Equations — Matthias K. Gobbert
Sommersemester 2012 — Universität Kassel
Homework 1 — due on Wednesday, April 11, 2012

How to submit: Send your submission as one single PDF file attachment to `gobbert@umbc.edu`. See the syllabus for more details.

Some general notes: Start a new problem on a new page. Order your problems correctly. All material for one problem should be together, in the order of specified parts.

1. [8 points.]

- (a) I would like to set up a mailing list for this class. In order to set up this list, please send me e-mail from the account of your choice.
- (b) Read the syllabus of this course. When I refer to the syllabus here, I am referring to the course webpage at <http://www.math.umbc.edu/~gobbert/teaching/math627.20122>. You should also look through the sub-pages and other pages linked from there. Basically, please make yourself familiar with the information provided about the course. Is everything clear or do you have any questions?
- (c) My homepage <http://www.math.umbc.edu/~gobbert> includes a lot of information posted there for your benefit and to address many frequently asked questions. Therefore, look around my homepage. Report on what you find and any problems you encounter. What this part basically recommend you to do is to learn more about the person teaching your class. This is a sensible thing to do, so you know where I am coming from and what my frame of reference might be. Do you have any suggestions?

Specifically, locate also the information *UNIX AT UMBC: Using Unix @ UMBC* as discussed in the Unix/Linux area of my homepage; read it, if you are not familiar with the information already. You are welcome to user other sources for an introduction to Linux, but looking at the specific one above establishes what is considered common knowledge. This material does not only apply to UMBC, but most of it is widely useful on Unix/Linux systems, such as the Linux cluster in the IT Servicezentrum of the Uni Kassel.

2. [12 points.]

- (a) Please explain what background in mathematics and in programming you have. Do you have any courses on numerical methods? Give more detail than just course numbers, rather discuss the content of the classes briefly, as you remember it now. Read the technical report HPCF-2010-2 handed out in class. Discuss which portions of it you understand and how well. In particular, do you understand all material in Section 2?
- (b) What courses on programming do you have, if any? What software have you used and how much? This might include software such as Matlab or programming languages like C or Java. But also include productivity software (\LaTeX , Word, plotting software, etc.) and information about operating systems (Windows, Linux, etc.).
- (c) To ask specifically, how much do know you about (i) Linux, (ii) editor(s) in Linux, (iii) Matlab, (iv) C, (v) Makefiles, (vi) compilers; if you do not know what I am asking, you likely do not know and should say so clearly. Remember that I will use this information to tailor the level of presentation, so you should be honest in assessing your own abilities.
- (d) How do you plan to access the cluster in the IT Servicezentrum of the Uni Kassel? For instance, do you plan on using your own laptop (which operating system, what network connection, etc.)? Or do you plan on using a university computer (which operating system, which location, etc.)?

This information will help me teach you better since your responses give me more information about your background and about your goals.