CMSC 483
Parallel and Distributed Processing

Instructor: Dr. Howard E. Motteler
Time: TuTh 2:30–3:45, SS 112
Texts: Transputer Education Kit Book Set

Course Outline

- The OCCAM programming language and environment (4 weeks)
  - The OCCAM language and development environment: folding editor, compiler, loader, network loader, and debugger
  - The OCCAM system interface: i/o libraries, file handling, string and numeric function, etc.
- Transputer Hardware (2 weeks)
  - Classification of multiprocessor systems
  - Transputer architecture
  - Networks of transputers and the network loader
- The implementation of OCCAM (2 weeks).
  - Hard and soft channels
  - Link processors
  - Process scheduling and context switching
- Topics in parallel and distributed programming
  - Classification of multi-processor machines
  - SIMD Programming and a CM Project
  - Parallel algorithms and measures of efficiency
  - OCCAM and dataflow
  - Scheduling and the task assignment problem

Grading

Grading is based mainly on projects, and in part on a midterm and final. There will be several short to moderate length projects and/or homeworks in the first half of the course, and a single large project, for the second half. Projects are submitted on floppy disks, and are due in class on the assigned due dates. Late projects lose 20% for each class meeting they are delayed. Students must propose their own final project. A detailed description and design sketch for this project must be submitted by the middle of the semester. All work must be done by the end of the semester; no incompletes will be given.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short projects and homework</td>
<td>100</td>
</tr>
<tr>
<td>Final Project</td>
<td>200</td>
</tr>
<tr>
<td>Midterm</td>
<td>50</td>
</tr>
<tr>
<td>Final</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>400</td>
</tr>
</tbody>
</table>