1. Prerequisites

AMC21, AMC22, AMC140A, AMC140B

2. Aims

This section of the course aims to familiarize the students with some common parallel programming and software development tools.

3. Course Composition

3.1. Introduction to Unix Software Development Tools.
   Duration: 2 meetings
   Major Requirement: None
   Coverage:
   (1) GNU Software Development Tools (gcc, gdb and others)
   (2) GNU Software Build Systems (make)

3.2. Introduction to the AGILA HPCS.
   Duration: 1 meeting
   Major Requirement: None

3.3. Introduction to Parallel Programming.
   Duration: 1 meeting
   Major Requirement: None

3.4. Parallel Programming with Message Passing Interface.
   Duration: 3 weeks
   Major Requirement: Major Programming Project
   Coverage:
   (1) Introduction to MPI concepts (Communicators, Rank and others)
   (2) Introduction to Message Passing
   (3) Basic MPI routines
   (4) Point-to-point routines
   (5) MPI status checking
   (6) Collective communications
   (7) Parallel I/O w/ MPI ROMIO

3.5. Parallel Programming w/ MPI in Java.
   Duration: Optional
   Major Requirement: Programming Exercise

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