**Blue Waters Petascale Semester Curriculum v1.0**

**Unit 4: OpenMP**

**Lesson 7: OpenMP Applications & Practice**

**Instructor Guide**

*Developed by Widodo Samyono for the Shodor Education Foundation, Inc.*



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*Browse and search the full curriculum at*[*http://shodor.org/petascale/materials/semester-curriculum*](http://shodor.org/petascale/materials/semester-curriculum)

*We welcome your improvements! You can submit your proposed changes to this material and the rest of the curriculum in our GitHub repository at*[*https://github.com/shodor-education/petascale-semester-curriculum*](https://github.com/shodor-education/petascale-semester-curriculum)

*We want to hear from you! Please let us know your experiences using this material by sending email to* [*petascale@shodor.org*](mailto:petascale@shodor.org)

1. The instructor needs to prepare the students about the shared memory concepts, applications, and practices by giving them flipped homework assignments before the class time. The flipped assignments are downloading and reading the lesson slides, watching the video lecture, and reading the homework exercises.
2. The instructor also can assign the students to read at least the overview of OpenMP in the modul slides as the flipped assignment, so the instructor may focus on the OpenMP applications and practices in the classroom.
3. The instructor instructs the students to watch at least the first 35 minutes of the supplemental video for this lesson as the flipped homework assignment and the rest 25 minutes can be discussed in the class or watched after the class.
4. In the classroom the instructor can use Inquiry-Based Learning (IBL) to teach the OpenMP applications and practices and demonstrate how to compile and run the program examples in the multicore computer if the time permits. The IBL is one of the best practices in teaching strategies for deep understanding in learning any concepts.

**Common Pitfalls for Students and Instructors**

Confused about Shared and Distributed Memory concepts.