CS 596: Introduction to Parallel Computing
Course Overview

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Table of Contents

1 Course Information
Course Information

Course Introduction

Course web page

http://www-rohan.sdsu.edu/faculty/mthomas/courses/f14/cs596

Contains course policy, lecture, and assignment links.

Goals

- Learn to solve scientific and engineering problems
- To provide an overview and introduction to Parallel computing
- Familiarize student with hardware and software architectures
- Learn to use different parallel processing mechanisms, including
  - Distributed Memory
  - Shared Memory
  - GPU computing
Course Topics

The course will consist of 4-5 modules, following Pacheco’s 2011 book as a guide, and through programming GPU devices using CUDA. These modules consist of several modules.

Lecture Modules

1. Introduction to Parallel Computing/Unix/SciComp Basics
2. Distributed Computing with Message Passing Interface
3. SciComp Basics: Performance, benchmarking, and data analysis
4. Shared-Memory Programming with Pthreads
5. Shared-Memory Programming with OpenMP
6. GPU computing & Cuda Programming
Textbooks and Reading

- CUDA By Example, by Sanders and Kandrot
- Additional reading as required (see course web pages).