# CS 6301: Special Topics in Computer Science—Concurrent Data Structures for Multi-Core Systems
# Section 003
# Programming Assignment 2

Instructor: Neeraj Mittal

Assigned on: Wednesday September 17, 2014
Due date: Wednesday October 1, 2014 (at midnight)

This is an individual assignment. Code sharing among students is strictly prohibited and will result in disciplinary action being taken.

## 1 Project Description

Implement $n$-thread mutual exclusion using:

1. Tournament algorithm using Peterson's algorithm as the building block, and
2. Lamport's bakery algorithm.

Compare the performance of your two implementations experimentally with respect to *system throughput* using the following system parameters:

1. *System load:* this depends on the mean inter-request delay. Assume that inter-request delay values are exponentially distributed and vary the mean time between two critical section requests from $[0, 100]$ time units in suitable increments.
2. *Degree of contention:* this depends on the number of threads in the system. Vary the number of threads from one to twice the number of cores in the machine in suitable increments.

Average the results over several runs. Prepare a report that clearly describes the results of your experiments.

## 2 Submission Information

You will have to submit your project using eLearning. Submit all the source files necessary to compile the program and run it. Also, submit a README file that contains instructions to compile and run your program. Finally, submit the report describing your experimental results.