CPSC 503 / CPEG 308 **Summer 2024**
Assignment 2 **University of Bridgeport**

Implement any one of the following deadlock management modules satisfying the following requirements:

- A graph reduction algorithm that reduces process-resource allocation graphs into process dependency graphs
  i/p – processes, resources, and relations
  o/p – processes and relations

- A deadlock detection algorithm
  i/p – process dependency graph (processes, relations)
  o/p – list of deadlocked processes.
  Print non-redundant cycles only.

- A deadlock avoidance module, using one resource type
  i/p – table of processes, current usage of resource, maximum usage of resource, and 1 request
  o/p – safe or unsafe state determination
  This should be a dynamic algorithm, i.e., allow user to enter a set of consecutive requests and the algorithm would allow them or not based on safety. Implement an option allowing requests to be generated one at a time from different processes *randomly*.

Bonus Opportunity (*You can implement the complexity analysis of the part you chose and/or attempt an additional module ☺*)

Out: Tue May 28, 2024
Due: Mon June 3, 2024 with Demo to Instructor on Tuesday June 4 during assigned slots