



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

COS 790: Hyper-Heuristics and Combinatorial Optimization
Assignment 1: Selection Constructive Hyper-Heuristics
Due Date: 7 September 2021, 23:30

This assignment requires you to implement a *selection constructive* hyper-heuristic to solve the *2D irregular packing problem*. Details of the problem can be found in the paper uploaded with the assignment specification. The hyper-heuristic must be evaluated on problem instances from *Terishima1* at <https://www.euro-online.org/websites/esicup/data-sets/#1535972088237-bbcb74e3-b507>

Assignments must be submitted via clickUP. The source code, compiled code and report must be submitted.

The report must include:

- A description of the construction heuristics used.
- A description of the hyper-heuristic, including the approach used and the parameters for the approach.
- A description of the experimental setup, i.e. parameter values used for the algorithms, problem instances used, technical specifications of the machine used to develop the program and run simulations.
- Perform a minimum of ten runs, each with a different random number generator seed, for each problem instance. List the best objective value, average objective value and average runtime over the ten runs for each problem instance. If using training and testing both training and test results must be reported.

Total: 30