The University of Western Australia
Dept. of Electrical & Electronic Engineering
Prof. Thomas Bräunl

## Mobile Robots AUTO4508

Points: 10

Lab Assignment 5 - Group - Brushfire

Implement the Brushfire algorithm for a given environment in occupancy grid format.

2	2	2	2	2	2	2	2	2	2	2	2	2
2	3	2	2	2	2	2	3	3	3	3	3	2
2	3	2	1	1	1	2	3	4	4	4	3	2
2	3	2	1	1	1	2	3	4	5	4	3	2
2	3	2	1	1	1	2	3	4	5	4	3	2
2	3	2	1	1	1	2	3	4	5	4	3	2
2	3	2	1	1	1	2	3	4	4	4	3	2
2	3	2	2	2	2	2	3	3	3	3	3	2
2	3	3	3	3	3	3	3	2	2	2	3	2
2	3	4	4	4	3	3	2	2	1	2	2	2
2	3	4	5	4	3	2	2	1	1	1	2	2
2	3	4	5	4	3	2	1	1	1	1	1	2
2	3	4	5	4	3	2	2	1	1	1	2	2
2	3	4	4	4	3	3	2	2	1	2	2	2
2	3	3	3	3	3	3	3	2	2	2	3	2
2	2	2	2	2	2	2	2	2	2	2	2	2

## **EXPERIMENT 1 (7 points)**

Read and display the occupancy grid as a binary QQVGA image file (1 means occupied, 0 means free).

Calculate the iterative Brushfire algorithm and print the resulting graph on screen.

## **EXPERIMENT 2 (3 points)**

Drive the robot from start (top left) to goal (bottom right) on a collision free course, following the Brushfire route. You can use any path, not necessarily the shortest path, e.g. use 'Wandering Standpoint'.