## Spreadsheet

The 2022 handicaps are produced using a spreadsheet courtesy of the Newstead Athletics Club.
As per the below screenshot, each member's chip number is entered, along with their details and for the first run of the season, a 2021 Best pace or non-LRC figure can be applied to commence the handicapping.

When a member wins a race a 20 second penalty per kilometre is applied to the net pace per kilometre.


## How does the magic happen???

In developing the handicaps, up to the race at Perth, a net per KM average from all the previous races in 2022 was applied (both long and short). This ensured an equal standing for all and allowed some time to develop a short and long course average.

From Race 8, Tailrace, a short and long course average are applied to allow the numbers to work better. In short, from race 8 all races shorter than White Hills will be calculated using the short course average and longer races are calculated using the long course average.


If someone has not completed a short or long course, in the fields the data will show as \#DIV/0!
In order to get the handicaps, the short or long course average is divided by the course difficulty ratio (Div 1 only) and then, multiplied by the distance.

Each person's predicted time is displayed in one column, then the predicted time is shown and finally the handicap is applied. The variable in this is the first runner, their time in seconds is applied to everyone's handicap hence giving a time from the starter. The starting time is adjusted by rounding up or down to make it easier for the starters, generally in lots of 10 seconds.


Once your head is around it, it does cometogether. For the above example the first runner has a predicted time to complete the 15.3 Km course of 7755 seconds. The systems calculates, based on a long course average of 267 seconds per Km, that the runner will complete the course in 4093 seconds or 1 hour 8 minutes and 13 seconds giving a handicap of 1 hour and 2 seconds which is rounded down neatly to 1 hour.

This goes to everyone, and the overall handicaps are produced.

## Case Study

The following is an example of how it all looks in the spreadsheet. Net per Km pace is updated with all races. As per the above description, short and long course averages are updated based on the course distance.


1. Numbers used for first handicap depending if the person is a follow-on member or new
2. Pace used to calculate handicap for races run one through three
3. Pace used for races four to seven
4. Paces used, depending on distance, for races 8 onwards

## When you win



When you win a race a 20 second penalty is applied for each Km of the race
This then alters the average times which are used to calculate the handicaps as per the short and long course averages

## Summary

Without a win the short course average was: 238 seconds per Km (first screen shot)
With a win the short course average is now: 218 seconds per Km (second screen shot)
This 20 second penalty will remain with that winner for 12 months

