Lab 2 ATMS 748

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Directions

- Acquire data with your program on data card
- Copy data table to your PC in CSV format (Loggernet:)
- Copy your CSV data to UNR Box
- Copy other lab teams' CSV data files from Box
- Write a program to read the data and make time series plots
- Turn in plot of timeseries of your HMP-155 temperature measurements and ensemble-averaged temperature measurements with standard deviation (error bars or patch)
- Turn in plot of timeseries of your HMP-155 relative humidity measurements and ensemble-averaged relative humidity measurements with standard deviation (error bars or patch)
- Turn in windrose plot of your wind measurements (wind speed and direction) • Turn in electronic copy of program

Read in CSV files

This doesn't include our group's data because it was collected the week after.

```
# read in csv and make room for colnames
g1 <-read.csv("/Users/jacktarricone/atms_748/data-code/lab2_data/csvs/lab2_g1.csv")
g2 <-read.csv("/Users/jacktarricone/atms_748/data-code/lab2_data/csvs/lab2_g2.csv")
g4 <-read.csv("/Users/jacktarricone/atms_748/data-code/lab2_data/csvs/lab2_g4.csv")
g5 <-read.csv("/Users/jacktarricone/atms_748/data-code/lab2_data/csvs/lab2_g5.csv")
```

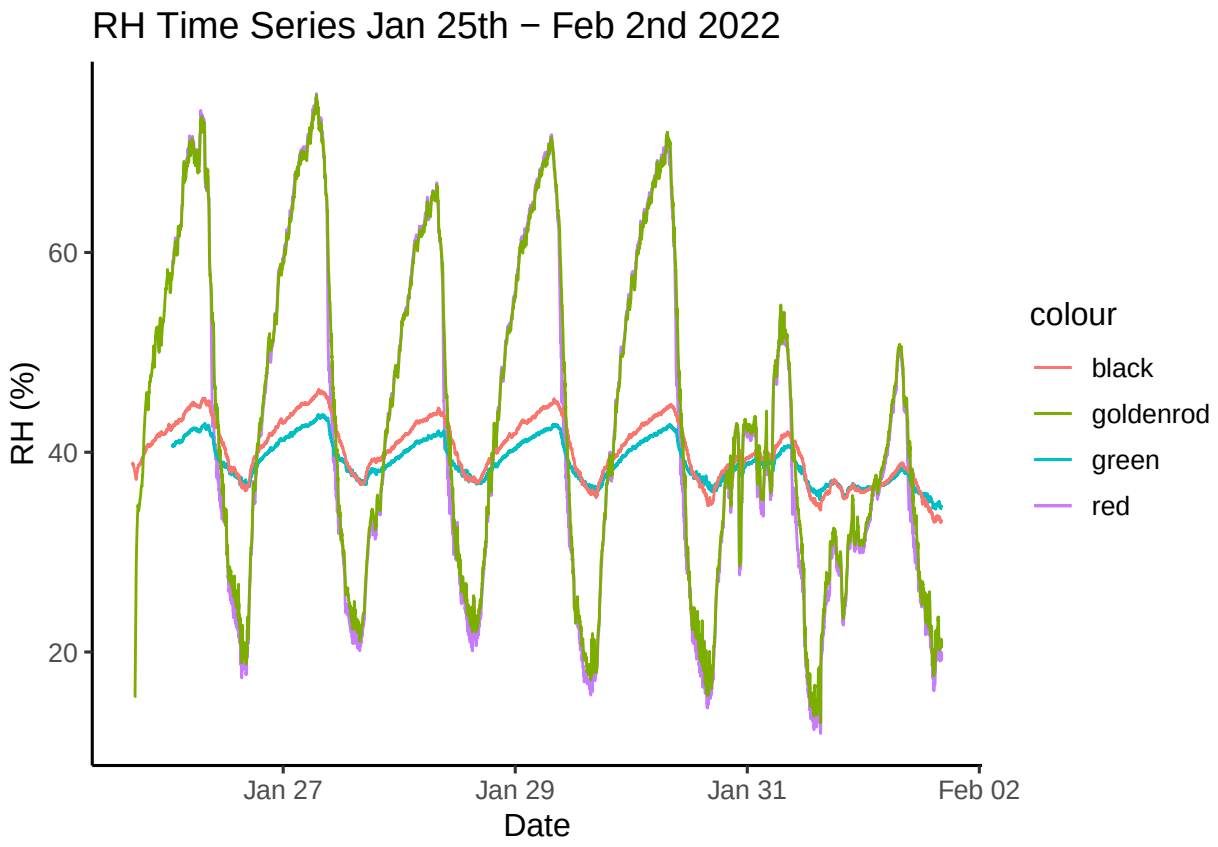
Transform dates back into R dates

```
# read in csv and make room for colnames
g1$date_time <-ymd_hms(g1$date_time)
g2$date_time <-ymd_hms(g2$date_time)
g4$date_time <-ymd_hms(g4$date_time)
g5$date_time <-ymd_hms(g5$date_time)
```

RH

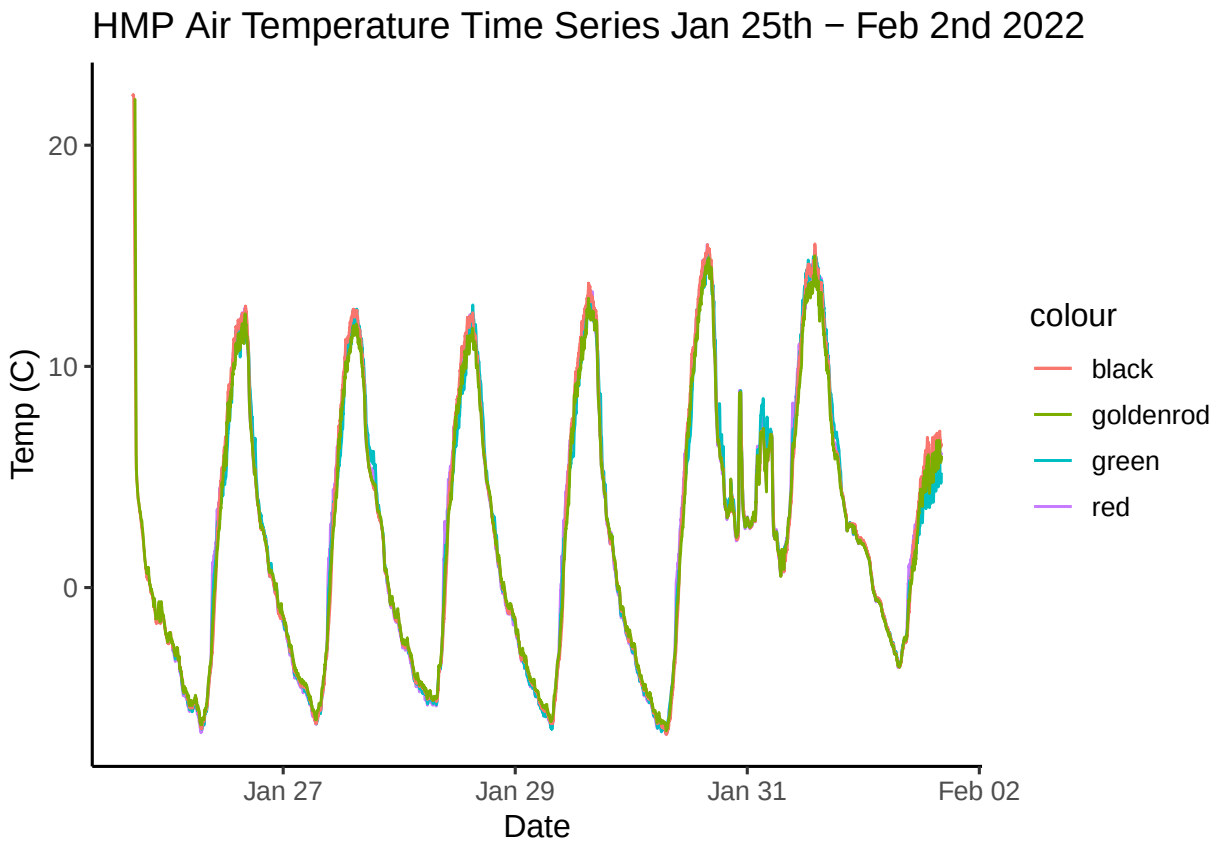
```
theme_set(theme_classic(12)) # set theme for plotting
ggplot() +
```

```
  geom_line(aes(x = g1$date_time, y = g1$RH, col = "red")) +
  geom_line(aes(x = g2$date_time, y = g2$RH, col = "green")) +
  geom_line(aes(x = g4$date_time, y = g4$RH, col = "black")) +
  geom_line(aes(x = g5$date_time, y = g5$RH, col = "goldenrod")) +
  labs(title = "RH Time Series Jan 25th - Feb 2nd 2022") +
  ylab("RH (%)") +
  xlab("Date")
```

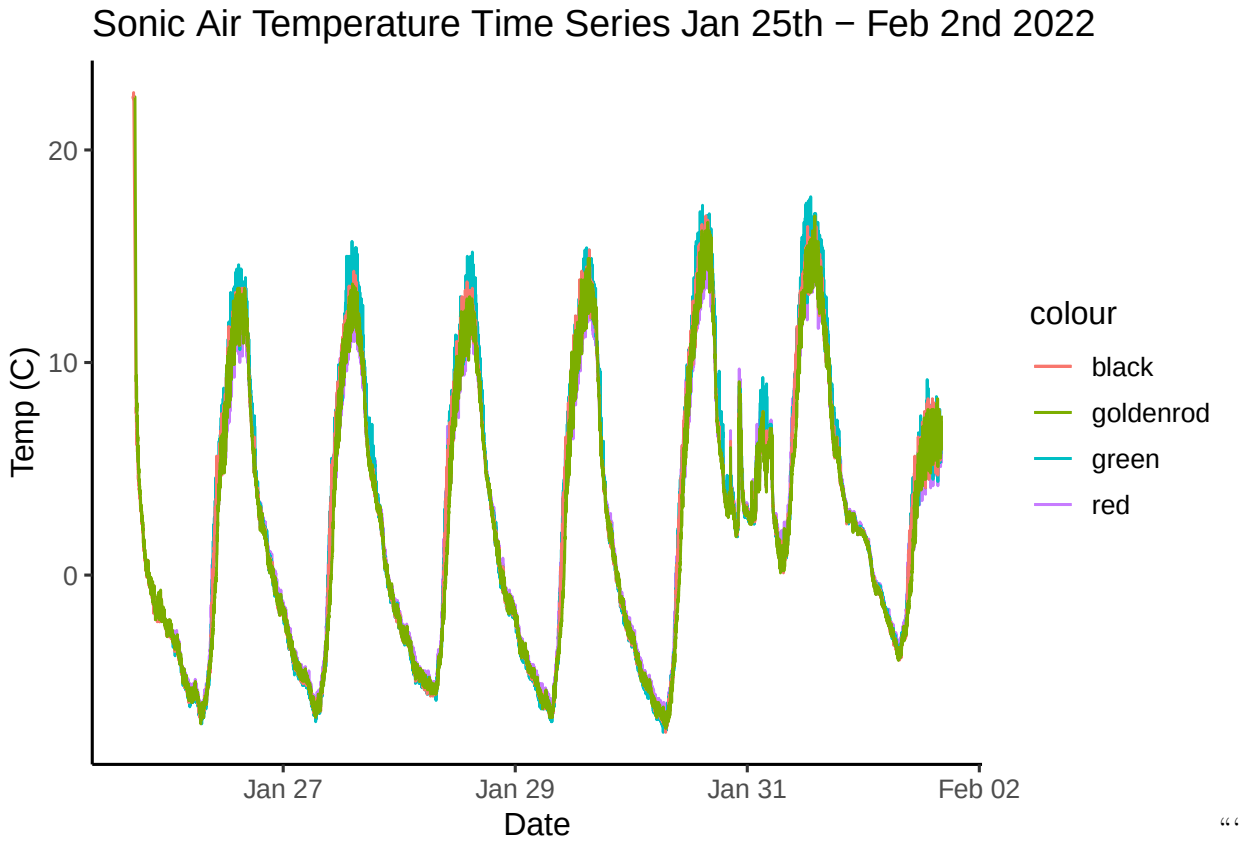


Air Temperature

```
theme_set(theme_classic(12)) # set theme for plotting
ggplot() +
  geom_line(aes(x = g1$date_time, y = g1$AirTC_Avg, col = "red")) +
  geom_line(aes(x = g2$date_time, y = g2$AirTC_Avg, col = "green")) +
  geom_line(aes(x = g4$date_time, y = g4$AirTC, col = "black")) +
  geom_line(aes(x = g5$date_time, y = g5$AirTC_Avg, col = "goldenrod")) +
  labs(title = "HMP Air Temperature Time Series Jan 25th - Feb 2nd 2022") +
  ylab("Temp (C)") +
  xlab("Date")
```




```
ggplot() +
  geom_line(aes(x = g1$date_time, y = g1$AirTemp, col = "red")) +
  geom_line(aes(x = g2$date_time, y = g2$AirTemp, col = "green")) +
  geom_line(aes(x = g4$date_time, y = g4$AirTemp, col = "black")) +
  geom_line(aes(x = g5$date_time, y = g5$AirTemp, col = "goldenrod")) +
  labs(title = "Sonic Air Temperature Time Series Jan 25th - Feb 2nd 2022") +
  ylab("Temp (C)") +
  xlab("Date")
```


Sonic Air Temperature Time Series Jan 25th − Feb 2nd 2022
Temp (C)
20
10
0
Jan 27
Jan 29
Jan 31
Feb 02
Date
colour
black
goldenrod
green
red

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