



# Tidy Time Series & Forecasting Using R

Australian Department of Education



# Instructors



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# Assumptions

- This is not an introduction to R. We assume you are broadly comfortable with R code, the RStudio environment and the tidyverse.
- This is not a statistics course. We assume you are familiar with concepts such as the mean, standard deviation, quantiles, regression, normal distribution, likelihood, etc.
- This is not a theory course. We are not going to derive anything. We will teach you time series and forecasting tools, when to use them, and how to use them most effectively.

## Key reference

**Hyndman, R. J. & Athanasopoulos, G. (2021)**  
***Forecasting: principles and practice*, 3rd ed.**

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**[OTexts.org/fpp3/](https://otexts.org/fpp3/)**

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- Free and online
- Data sets in associated R package
- R code for examples

# Poll: How experienced are you in forecasting

- 1 Guru: I wrote the software, teach forecasting, and do the conference circuit.
- 2 Expert: It has been my full time job for more than a decade.
- 3 Skilled: I have been doing it for years.
- 4 Comfortable: I understand it and have done it.
- 5 Learner: I am still learning.
- 6 Beginner: I have heard of it and would like to learn more.
- 7 Unknown: What is forecasting? Is that what the weather people do?

# Poll: How proficient are you in using R?

- 1 Guru: The R core team come to me for advice.
- 2 Expert: I have written several packages on CRAN.
- 3 Skilled: I use it regularly and it is an important part of my job.
- 4 Comfortable: I use it often and am comfortable with the tool.
- 5 User: I use it sometimes, but I am often searching around for the right function.
- 6 Learner: I have used it a few times.
- 7 Beginner: I've managed to download and install it.
- 8 Unknown: Why are you speaking like a pirate?



# Install required packages

```
install.packages(c(  
  "tidyverse",  
  "fpp3",  
  "readabs",  
  "GGally",  
  "sugrrants"  
))
```

# Approximate outline

Day	Topic	fpp3 chapter
1	1. Introduction to tsibbles	2
1	2. Time series graphics	2
1	3. Transformations	3
1	4. Decomposing patterns	3
1	5. Forecasting basics	5,7
2	6. Accuracy evaluation	5
2	7. Exponential smoothing	8
2	8. ARIMA models	9,10
2	9. Multivariate modelling	12
2	10. Forecast reconciliation	11

**[workshop.nectric.com.au/tidyfc2024](https://workshop.nectric.com.au/tidyfc2024)**

# Fun post-forecasting training project

The members of the Economic Analysis Team will be conducting a project following the forecasting training session to engrain the learnings and practice our skills.

Other attendees are welcome to join in the fun, particularly if you're not in a forecasting area and would otherwise not be using your newly acquired skills.