

Data science and Excel

Presented by Jim Sturgiss



Learn the basics of descriptive statistics, bivariate data analysis, and inferential tests with Excel. Learn how to manipulate Excel charts to make data analysis in dep...

Format: 1. Face to Face

Audience: The course is focussed at all Science teachers 7 - 12. However, it is suitable for Mathematics teachers wanting to know more about Excel and where their syllabus fits in with science and vice versa. Content includes statistics from Mathematics 7-10 and Standard 2 syllabuses.

Description

Excel is simply the best tool to analyse and visual data. So good that it has been largely copied by Google Sheets.

This course is as much about Excel as it is data science.

Additional notes about this format

The workshop will be a blended delivery. Participants will access online resources.

Teaching Standards

2.6.2 Proficient Level - Information and Communication Technology (ICT)

6.3.2 Proficient Level - Engage with colleagues and improve practice

Are you in NSW? If so, this is relevant for you

Completing this course will contribute 5 hours of NSW Education Standards Authority (NESA) Registered PD addressing 2.6.2 & 6.3.2 from the Australian Professional Standards for Teachers towards maintaining Proficient Teacher Accreditation in NSW.

TTA (Teacher Training Australia) is endorsed to provide the NSW Education Standards Authority (NESA) Registered Professional Development for teachers accredited at Proficient and Lead Level Teacher.

Occurrences

There are no occurrences of this format in Australia (NSW - Accredited) at this time.

Sessions

Surveys to collect data

15 minutes

Participants will collect and access large quantities of data quickly using an online survey.

Foundation Statistics

1 hour and 15 minutes

The following chart types from Stage 4 Mathematics will be demonstrated using Excel: histograms, pareto charts, Box and whisker plots.

Participants will use data collected during the previous session to create charts of the data using Excel.

Discussion of measures of central tendency.

Participants will use Excel to calculate 5 number summaries of data.

Participants will use Excel to identify outliers.

The normal distribution

1 hour and 30 minutes

Discussion of the characteristics of the normal distribution including: standard deviation, the empirical rule, z-scores, uncertainty and confidence in measurements.

Participants will use Excel to calculate mean and standard deviation of data collected earlier. They will calculate and make predictions the Standard Error of Means (SEM)

Bivariate Analysis

30 minutes

Discussion of bivariate analysis, correlation and causation.

Participants will plot bivariate data using excel, add trendlines, add equation of the trendline and provide values for variance in data.

Science Extension Statistics

1 hour and 30 minutes

Discussion of statistical difference of mean and distribution

Participants will analyse data set of Galapogas finches for statistical evidence of evolution of populations using:

Z-test

T test

F-test

Chi-squared test

About the presenter



Jim Sturgiss

Creator

Improving outcomes through aligned teaching practice synergies.

Jim is an educational researcher and independent educational consultant. A recipient of the NSW PTC Distinguished Service Award for leadership in delivering targeted professional learning to teachers, he works with schools to align assessment, reporting and learning practice. He has been a DoE Senior Assessment Advisor where he developed many statewide assessments, (ESSA, SNAP, ELLA, BST) and as Coordinator: Analytics where he developed reports to schools for statewide assessments and NAPLAN.

Selected NSW Department of Education and Communities appointments

2015 Analytics, Systems and Development Coordinator

2012 - 2013 School Assessment Design and Development Acting Coordinator (ESSA)

2007 - 2010 Head Teacher Science, Newtown High School of Performing Arts

2004 - 2005 Senior Assessment Officer, Computer Skills Assessment (CSA6)

2004 Test Development Officer, Secondary Numeracy Assessment Program (SNAP)

2000 - 2004 Head Teacher Science, Concord High School

1998 - 2000 Senior Assessment Officer, English Language and Literacy Assessment (ELLA)

Teaching Qualifications

1993 - 1997 M.Ed. (Hons) University of New England (Thesis: Literacy & learning in Science)

1979 Dip. Ed. University of Wollongong

1976 - 1978 B.Sc. University of Wollongong (Majors in Chemistry and Bioenergetics)



Enrol now to secure your spot

Limited spots are available. Please enrol online or fax your enrolment to 1300 667 691 to secure your spot.

Please note, by submitting this enrolment form you are confirming that you have been given financial approval by your employer to attend this course. Cancellation advice should be given in writing 7 days before the commencement of this course.

Product:

Data science and Excel

Occurrence Date:

Your Name:

Your email address:

Employer name:

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