

Government Statistical Service (GSS) Learning Academy Directory 2018-19



Analytical Skills

Analytical Skills

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Introduction

The Analytical learning and development team is made up of a team manager who sets the strategic learning and development plan in place. Supporting them are two Learning and Development Officers, one who is responsible for the design and delivery of statistical learning (including accredited learning) and **Julian Boyer** who supports learning and development for the Government Statistical Service (GSS). **Ruth Snook** is the Statistical Trainer who is responsible for a range of statistical programmes.

What is Analytical?

The analytical work strand covers three areas:

- Statistical learning and development
- Data Science learning and development
- Economic learning and development

Each of these areas plays an integral part to supporting professional capability across ONS and the GSS. The range of learning on offer is aligned to broader aspirations and strategic objectives to ensure that skills and knowledge are in place to ensure that government statistical, economic and data science capability is provided at the most professional and high quality standards.

For learners the range of development available is broad. We offer short course programmes to develop and refresh the skills of statistical analysts. We also provide a rich source of learning on Data Science, designed in partnership with the Data Science Campus. To support this we also provide accredited learning in the shape of level 3 and level 5 programmes, as well as high level professional development through the MSc Data Science for Government through University College London, Oxford Brookes University and the University of Southampton.

Not all of our learning is classroom based as we offer high quality online packages to ensure flexibility of choice to meet a range of different needs. We utilise the enormous range of skills and talent within ONS to deliver learning, and we also buy in learning from the best suppliers on the market.

Within the analytical strand we also feature learning and development offered by the thriving RAS community. Offered as a range of intelligence sharing, guest speakers and taught sessions the community provides a supportive and in depth way of improving and sharing best practice.

Please take your time to read through the following information to help plan your personal and professional development.

Category: Statistical/Data Science – Statistical Learning Pathway – Academic pathway

Title: Diploma in Data Analytics (educational attainment Level 4) – ONS/GSS

Depending upon the delivery cycle and availability of training providers for this course, it is anticipated that this will be ready for its first cohort intake in winter 2017/18.

Some of the course modules that are being considered for inclusion are (this is not an exhaustive list):

- ▶ Develop own effectiveness and professionalism
- ▶ Principles of data management infrastructure
- ▶ Data analysis tools
- ▶ Data analysis: Data science
- ▶ Statistical analysis of data sets
- ▶ Designing and developing computer programmes (various)



It is likely that this will be a series of taught courses varying from 1 to 8 days, provided by an external provider



This course is aimed at any ONS/GSS staff who are interested in progressing their learning to Level 4 in Data Analytics



The diploma is a 2 Year Programme however, there is the option to take individual modules as CPD

There will be a rigorous application process to ensure that applicants can demonstrate that they have a reasonable expectation of achieving the required outcomes of the Level 4 Diploma. This can be supported by the demonstration or evidence of prior achievement or performance in the role prior to starting the course.

Category: Statistical/Data Science – Statistical Learning Pathway – Academic pathway

Title: MSc in Data Analytics for Government (CPD, PGCert, Diploma, MSc) – Level 7 – ONS/GSS

Brief description: The MSc in Data Analytics for Government is aimed at government analytical staff who are looking to develop their Level 7 learning. The MSc is available via University College London, Oxford Brookes University and University of Southampton. There is a set of 4 core modules after which students may follow a statistical pathway, a data science pathway, or a combination of both. Modules may also be taken as 'stand alone' for Continuous Professional Development (CPD). Costs for the full MSc and individual modules vary by University.

Learning outcomes: By the end of the course, participants will be able to demonstrate a wide breadth of statistical and/or data science knowledge (depending on the University attended and the pathway undertaken). An example of the learning outcomes includes:

- ▶ Concepts and frameworks used in Official Statistics;
- ▶ Data Science fundamentals, including working with big and open data and understanding the challenges of working with unstructured data;
- ▶ The statistical theory underpinning a wide variety of research, design and data collection methods;
- ▶ Coding and programming techniques in R and other relevant software
- ▶ Traditional survey research and analytical techniques, including regression, demographic methods, index numbers and time series analysis
- ▶ Data mining and applied data mining techniques for information extraction and indexing;
- ▶ Large scale parallel processing through the use of distributed systems.

Analytical Skills

Modules are delivered as follows, depending on the University attended:



- University of Southampton – each module is delivered in a block week
- University College London – each module is delivered one day per week across one term
- Oxford Brookes University – each module is delivered one day per week across one term

All modules are taught sessions and are assessed either by examination or through coursework



Analysts and Data Scientists who are keen to progress their learning to Level 7



University College London and Oxford Brookes University are investigating the possibility of delivering their modules via 'streaming' from Sep 2018



Delivery of the modules in other UK locations is currently being investigated and will be promoted via the GSS website

Category: Statistical - Short Course Programme – Introductory Level

Title: Quality and Statistics – ONS/GSS

Brief description: This is a one day classroom based session for staff to increase awareness in the area of quality and statistics. The course aims to introduce some of the quality considerations appropriate to the production of Official Statistics.

Learning outcomes: By the end of the course, participants will gain:

- ▶ an understanding of the importance of quality through aligning with specific aspects; of the Code of Practice, and through following the Generic Statistical Business Process Model (GSBPM);
- ▶ knowledge in the practical application of quality and how to implement it; and
- ▶ an overview of relevant guidance and tools.



This is a one-day taught session, delivered at the Newport and Titchfield ONS sites.



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge of ensuring quality within statistical outputs



One day



Newport and Titchfield

Category: Statistical - Short Course Programme – Introductory Level

Title: Administrative Data – ONS/GSS

Brief description: This is a half day classroom based session aimed at providing participants with an introduction to administrative data and, the differences between survey and administrative data by:

- ▶ highlighting some of the challenges when linking different datasets; and
- ▶ providing an insight into the legal issues around acquiring administrative data.

Learning outcomes: By the end of the course, participants will have developed an understanding of:

- ▶ what is meant by the term administrative data
- ▶ the benefits and limitations of using administrative data
- ▶ how to access administrative data
- ▶ the principles behind matching and linking microdata; and
- ▶ assessing the quality of administrative data.



This is a half day course



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge and understanding in the field of administrative data



Half day



Newport and Titchfield

Category: Statistical - Short Course Programme – Introductory Level

Title: Geography for Statistics – ONS/GSS

Brief description: This is a two-day event, combining classroom and computer based activity. It will introduce participants to the importance of geography in the collection, production and use of statistics. The course also teaches the generic elements of geographic knowledge and understanding needed for good analysis and research.

Learning outcomes: By the end of the course, participants will:

- ▶ be informed about of the issues with geography when used for statistics in the UK, as well as solutions to deal with them;
- ▶ understand spatial thinking and how it helps to get statistics right;
- ▶ identify the different types of statistical maps, understand their application and interpretation;
- ▶ be able to produce a statistical map using appropriate software;
- ▶ be aware of the importance of the GSS Geography Policy; and
- ▶ know about sources of geography data for Official Statistics.



This is a two-day event combining tutor led class, group and individual activities. It involves the use of geographic tools and software for map creation. It is delivered at the Newport and Titchfield ONS sites.



This is aimed at those interested in increasing their knowledge and understanding about the importance of geography in the statistical system



Two days



Newport and Titchfield

Category: Statistical - Short Course Programme – Introductory Level

Title: Data Linkage – ONS/GSS

Brief description: This is a one day classroom based session aimed at providing participants with an introduction to the principles, theory and practice of data linkage. Data linkage is playing an increasing role in producing statistics, to support a wide range of users and uses, through integration of data from multiple sources. Please note that this course does not include any computer-based practical data linkage exercises.

Learning outcomes: By the end of the course, participants will be able to understand:

- ▶ the difficulties involved in data linkage;
- ▶ desirable qualities of matching variables;
- ▶ how to prepare datasets before matching;
- ▶ different types of linkage methods;
- ▶ how to link very large datasets;
- ▶ how to evaluate the quality of your matches; and
- ▶ how to link encrypted datasets.



This is a one day taught session, delivered at the London, Newport and Titchfield ONS sites.



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge and understanding of data linkage



One day



London, Newport and Titchfield

Category: Statistical - Short Course Programme – Introductory Level

Title: Editing and Imputation – ONS/GSS

Brief description: This is a one day classroom based session, aimed at introducing participants to the processes of editing and imputing in surveys. The course considers the editing process of detecting and correcting errors in survey response data, as well as the imputation process of estimating for non-response in surveys. The focus of the course and practical examples will mostly relate to business surveys.

Learning outcome: By the end of the course, participants will be able to understand:

- ▶ the vital importance of editing and imputation; and
- ▶ how editing and imputation methods are implemented in practice.



This is a one day taught session, delivered at the Newport ONS site only.



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge and understanding of editing and imputation in surveys



One day



Newport

Category: Statistical - Short Course Programme – Introductory Level

Title: Introduction to Questionnaire Design and Testing – ONS/GSS

Brief description: This is a one day classroom based session for staff to increase their knowledge and understanding of the design and testing of questions and questionnaires. The aim of the course is to introduce participants to data collection methodology and how it is applied to the survey development process.

Learning outcomes: By the end of the course, the participant will be able to understand and identify:

- ▶ different sources of non-sampling error, focusing on measurement error and non-response error;
- ▶ different modes of data collection including mixed modes and web data collection;
- ▶ questionnaire and question design principles including different types of questions, sources of measurement error, including mode effects, and potential ways to mitigate them;
- ▶ qualitative and quantitative methods for developing and testing questions, including expert review and cognitive question testing; and
- ▶ methods of analysing and reporting on qualitative data.



This is a one-day taught session, delivered at the Newport and Titchfield ONS sites and if required at the offices of other Government departments.



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge in the design and testing of questionnaires



One day



Newport and Titchfield

Category: Statistical - Short Course Programme – Introductory Level

Title: Sample Design and Estimation (Social) – ONS/GSS

Brief description: This is a one day classroom based session which explores aspects of sampling and estimation that are particularly applicable to social (household) surveys.

Learning outcomes: By the end of the course, participants will be able to understand:

- ▶ the use of sampling frames;
- ▶ sample design and different sampling methods;
- ▶ estimation of simple statistics under various designs and their associated standard errors and confidence intervals; and
- ▶ the use of weights.



This is a one or two day taught session, delivered at Newport and Titchfield ONS sites.



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge and understanding of editing and imputation in surveys



One day



Newport and Titchfield

Category: Statistical - Short Course Programme – Introductory Level

Title: Sample Design and Estimation (Business) – ONS/GSS

Brief description: This two-day classroom based session aimed at introducing participants to sampling design and estimation considerations in business surveys. The course considers the sampling frame, sample design, calibration weights, outliers and the estimation process.

Learning outcomes: By the end of the course, participants will be able to understand:

- ▶ the importance of creating and maintaining good sampling frames;
- ▶ the need for a sampling selection method that can provide good quality and representative results;
- ▶ how sampling is done for business surveys in ONS (use of the IDBR);
- ▶ the main estimators of population totals used in ONS business surveys
- ▶ design and calibration weights;
- ▶ under what circumstances each estimator is appropriate and to be aware of different methods for assessing the accuracy of estimators;
- ▶ what outliers are and why they occur;
- ▶ some methods of outlier detection and treatment strategies; and
- ▶ the Winsorisation method.



This is a two-day taught course, delivered at the Newport ONS site only.



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge and understanding of sample design and estimation in business surveys



Two days



Newport

Category: Statistical - Short Course Programme – Introductory Level

Title: Seasonal Adjustment – ONS/GSS

Brief description: This is a one and a half day classroom and computer based session, aimed at providing participants with a basic introduction to the theory behind seasonal adjustment and the seasonal adjustment process. An overview is also given of the US Census Bureau's software X-13ARIMA-SEATS, which is the GSS recommended software for seasonal adjustment.

Learning outcomes: By the end of the course, through a mixture of theory and practical application of X-13ARIMA-SEATS, course participants will gain an understanding of:

- ▶ the basic theory underpinning seasonal adjustment;
- ▶ how to perform basic seasonal adjustment using X-13ARIMA-SEATS;
- ▶ how to quality assure seasonal adjustment; and
- ▶ issues to consider when publishing seasonally adjusted estimates.



This is a one and a half day taught session, delivered at the Newport ONS site only.



This is aimed at any ONS/GSS staff who are interested in undertaking applied learning in seasonal adjustment



One and a half days



Newport

Category: Statistical - Short Course Programme – Introductory Level

Title: Index Numbers – ONS/GSS

Brief description: This is a one day classroom based session, aimed at introducing participants to the theory behind index numbers and the techniques used in practice.

Learning outcomes: By the end of the course, participants will be able to understand:

- ▶ the uses of index numbers, in government and wider;
- ▶ the definitions of value and value share;
- ▶ Laspeyres and Paasche price and volume indices;
- ▶ the basics of how to choose an index formula; and
- ▶ the definitions of deflation and referencing.



This is a one day taught session, delivered at the Newport ONS site only.



This is aimed at any ONS/GSS staff who are interested in what index numbers are and how they are applied in practice



One day



Newport

Category: Statistical - Short Course Programme – Introductory Level

Title: Statistical Disclosure Control – ONS/GSS

Brief description: This is a one day classroom based session aimed at introducing participants to the potential disclosure risks and available statistical disclosure control methods.

Learning outcomes: By the end of the course, participants will understand:

- ▶ what is meant by statistical disclosure risk and statistical disclosure control;
- ▶ why there is a need to protect data against disclosure;
- ▶ how to recognise situations where there is a risk of statistical disclosure;
- ▶ the disclosure techniques and tools that are used to protect data; and
- ▶ be aware of the ONS / GSS guidance for disclosure control.



This is a one day taught session, delivered at the London, Newport and Titchfield ONS sites.



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge and understanding of the recommended disclosure control methods for official statistics



One day



London, Newport and Titchfield

Category: Statistical - Short Course Programme – Introductory Level

Title: Introduction to National Accounts – ONS/GSS

Brief description: This is a one day classroom session, aimed at introducing participants to the different approaches to measuring Gross Domestic Product (GDP). The course will also introduce the Balance of Payments, the division of the economy into sectors, and balancing theory and practice.

Learning outcomes: By the end of the course, participants will be able to;

- ▶ describe the three approaches to measuring GDP;
- ▶ understand what is included in the Balance of Payments;
- ▶ list the characteristics of the sectors in the UK;
- ▶ understand why we need to balance; and
- ▶ identify the participants in the economy and the transactions that flow between them.



This is a one day taught session, delivered at the Newport ONS site only.



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge and understanding of the UK National Accounts system



One day



Newport

Category: Statistical - Short Course Programme – Introductory Level

Title: Population Statistics and the Census – ONS/GSS

Brief description: This is a one day classroom based session, aimed at introducing participants to key ONS demographic outputs. The course will provide an understanding of the range of outputs produced and the challenges involved.

Learning outcomes: By the end of the course, participants will be able to understand:

- ▶ key elements of conducting a census and population estimates
- ▶ migration estimates and population projections; and
- ▶ how demographic analysis is conducted by ONS.



This is a one day taught session, delivered at the Titchfield ONS site only.



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge and understanding of population statistics and the Census



One day



Titchfield

Category: Statistical - Short Course Programme – Introductory Level

Title: Communicating Statistics – ONS/GSS

Brief description: This is a one day classroom-based session, aimed at introducing participants to the importance in communicating statistics of user engagement, good commentary and clear data visualisation. The course will discuss ways of improving how we communicate our statistics to a range of users, as well as consider a set of useful tools that can be used to communicate statistics effectively.

Learning outcomes: By the end of the course, participants will know:

- ▶ why user engagement is important;
- ▶ effective ways of identifying and engaging with users;
- ▶ how social media can be effective in engaging with users;
- ▶ some tools for good practice in writing about statistics;
- ▶ some 'top-tips' for effective data visualisation; and
- ▶ how to conduct a peer review.



This is a one day taught session, primarily delivered at the Newport and Titchfield ONS sites. The course can also be delivered in GSS departments on request.



This is aimed at all ONS/GSS staff who are interested in increasing their knowledge and skill in communicating statistics to users



One day



Newport and Titchfield

Category: Statistical - Short Course Programme – Introductory Level

Title: An Introduction to Data Visualisation – ONS/GSS

Brief description: This is a one day classroom based session, aimed at introducing participants to the basic principles of data visualisation and the application in designing functional and effective static graphics for a wide audience.

Learning outcomes: By the end of the course, through use of examples and theory, participants will be able to understand:

- ▶ the fundamentals of effective data graphics at a basic level (for example in tables and charts);
- ▶ how different charts can be used to highlight particular data relationships;
- ▶ the wider potential for data visualisation to support exploration and narrative; and
- ▶ emerging trends in data visualisation, their relevance and application.



This is a one day taught session, delivered at the London, Newport and Titchfield ONS sites



This is aimed at any ONS/GSS staff who regularly produce or publish data visualisations and are interested in developing their data visualisation skills



One day



London, Newport and Titchfield

Category: Statistical - Short Course Programme – Intermediate Level

Title: Sample Design and Estimation (Social surveys) – ONS/GSS

Brief description: This is a one day classroom based session, aimed at exploring more complex aspects of sampling and estimation that are particularly applicable to social (household) surveys.

Learning outcomes: By the end of the course, through practical application of the methods, participants will be able to understand:

- ▶ the principles and practicalities behind sampling and estimation used within Official Statistics;
- ▶ when to use different sampling strategies, with particular emphasis on multi-stage sampling;
- ▶ how sample data can be used to estimate parameters of interest, with emphasis on weighting strategies that account for non-response and allow calibration to known population totals; and
- ▶ how to assess the quality of sample estimates, with attention paid to sampling errors and the use of design factors.



This is a one day taught session, delivered at the Newport and Titchfield ONS sites



This is aimed at analytical ONS/GSS staff who are interested in understanding more complex aspects of sampling and estimation in social surveys



One day



Newport and Titchfield

Category: Statistical - Short Course Programme – Intermediate Level

Title: Sample Design and Estimation (Business surveys) – ONS/GSS

Brief description: This is a one day classroom based session, aimed at exploring more complex aspects of sampling and estimation that are particularly applicable to business (or establishment) surveys.

Learning outcomes: By the end of the course, through practical application of the methods, participants will understand:

- ▶ the principles and concepts behind sampling and estimation used within Official Statistics;
- ▶ when to use different sampling strategies, with particular emphasis on stratification;
- ▶ how sample data can be used to estimate parameters of interest, with emphasis on estimation methods that make best use of other available information; and
- ▶ how to assess the quality of sample estimates, including the impact of the sample design and estimator.



This is a one day taught session, delivered at the Newport ONS site only



This is aimed at analytical ONS/GSS staff who are interested in understanding the more complex aspects of sampling and estimation in business surveys



One day



Newport

Category: Statistical - Short Course Programme – Intermediate Level

Title: Small Area Estimation – ONS/GSS

Brief description: This is a one day classroom based session. The course is aimed at introducing participants to the methodology applied to small area estimates, as well as developing knowledge to know when and how small area estimation methods should be applied.

Learning outcomes: By the end of the course, participants will be able to:

- ▶ understand the concepts and principles of a variety of methods;
- ▶ be aware of which methods are most commonly used and why;
- ▶ observe how different methods are applied;
- ▶ understand which techniques are used in Official Statistics; and
- ▶ combine and model survey data with other datasets.



This is a one day taught session, delivered at the Titchfield ONS site only



This is aimed at analytical ONS/GSS staff who are interested in understanding the application of methods in small area estimation



One day



Titchfield

Category: Statistical - Short Course Programme – Intermediate Level

Title: Geography for Statistics – Spatial Analysis – ONS/GSS

Brief description: This is a largely practical, classroom based session using specialist geography (GIS) software. It will provide an overview of geospatial analysis theory in the context of Official Statistics, which participants will then apply and interpret in a practical context. The course is about using location to gain a deeper understanding of data analyses.

Learning outcomes: By the end of the course, participants will:

- ▶ understand what is 'special' about spatial data;
- ▶ understand some necessary spatial statistical concepts;
- ▶ be able to apply a selection of spatial statistical techniques and interpret the outputs;
- ▶ to be able to confidently identify, analyse and interpret spatial patterns in data;
- ▶ gain hands-on experience working with software designed for spatial analysis; and
- ▶ be aware of other digital sources for specialist software and information about spatial analysis.



This is a one day taught session, delivered at the Newport and Titchfield ONS sites



This is aimed at analytical ONS/GSS staff who are interested in developing their understanding of spatial analysis and the role of geography in understanding data



One day



Newport and Titchfield

Category: Statistical - Short Course Programme – Intermediate Level

Title: Editing and Imputation – ONS/GSS

Brief description: This is a one day classroom based session, aimed at introducing participants to the processes of editing and imputing in business and social surveys. The course considers the editing process of detecting and correcting errors in survey response data, as well as the imputation process of estimating for survey non-response.

Learning outcome: By the end of the course, participants will be able to understand:

- ▶ the vital importance of editing and imputation;
- ▶ understand the theoretical aspects of a number of editing and imputation methods; and
- ▶ how editing and imputation methods are implemented in practice.



This is a one day taught session, delivered at the Newport and Titchfield ONS sites



This is aimed at any ONS/GSS staff who are interested in increasing their knowledge and understanding of editing and imputation in business surveys



One day



Newport and Titchfield

Category: Statistical - Short Course Programme – Intermediate Level

Title: Seasonal Adjustment – ONS/GSS

Brief description: This is a two-day classroom based session, aimed at introducing participants to the basic and advanced theory behind seasonal adjustment and the seasonal adjustment process. Theories are applied through the use of the US Census Bureau's software X-13-ARIMA-SEATS, which is the GSS recommended software for seasonal adjustment.

Learning outcomes: By the end of the course, through a mixture of theory and the practical application of X-13-ARIMA-SEATS, course participants will:

- ▶ gain an in-depth understanding of the theory underpinning seasonal adjustment (building on the Level 1 course);
- ▶ be able to perform more advanced seasonal adjustment; and
- ▶ be able to analyse their own time series.



This is a two-day taught session, delivered at the Newport ONS site only



This is aimed at analytical ONS/GSS staff who are interested in gaining more advanced knowledge of seasonal adjustment and the application of methods in X-13-ARIMA-SEATS



Two days



Newport

Category: Statistical - Short Course Programme – Intermediate Level

Title: Index Numbers – ONS/GSS

Brief description: This is a one and a half day classroom based session, aimed at introducing participants to the theoretical background to index numbers. The course also discusses the index number techniques used in practice, as well as aspects of ONS price indices.

Learning outcomes: By the end of the course, participants will be able to understand:

- ▶ the definitions of value and value share;
- ▶ Laspeyres and Paasche price and volume indices;
- ▶ how to choose an index formula, from the axiomatic, economic and statistical approaches;
- ▶ the use of domains and aggregation in calculating index numbers;
- ▶ the definitions of deflation, referencing and linking;
- ▶ the aspects of ONS Price Indices; and
- ▶ the wider uses of index numbers.



This is a one and a half day taught session, delivered at the Newport ONS site only



This is aimed at analytical ONS/GSS staff who are interested in gaining more advanced knowledge of the index number techniques used in practice in Official Statistics



One and a half days



Newport

Category: Statistical - Short Course Programme – Intermediate Level

Title: Hypothesis Testing – ONS/GSS

Brief description: This is a one day classroom based session, aimed at providing participants with an overview to hypothesis testing and its application in Official Statistics.

Learning outcomes: By the end of the course, through the use of examples and theory, participants will gain:

- ▶ an understanding of the basics of hypothesis testing;
- ▶ a working knowledge of statistical power; and
- ▶ an overview of more complex hypothesis testing problems and knowledge of how to deal with them.



This is a one day taught session, delivered at the Newport and Titchfield sites



This is aimed at analytical ONS/GSS staff who are interested in gaining knowledge of the advanced workings of hypothesis testing



One day



Newport and Titchfield

Category: Statistical Profession – The Government Statistician Group (GSG)

Title: Compulsory Learning for Members of the GSG

This section sets out the compulsory learning that is expected to be undertaken by all members of the Statistical Profession within the 18 months of commencing their employment. This is aimed at:

- ▶ Assistant Statisticians;
- ▶ Statistical Officers; and
- ▶ Statistical Data Scientists.

All members of the profession are expected to undertake the following compulsory learning:

- a) A relevant Induction course (relevant to one's career pathway);
- b) The GSG Foundations Course; and
- c) The Career Checkpoint Course.

Category: Induction Courses

Title: Statistical Fast Stream Induction

All Assistant Statisticians are expected to attend this course. This course covers background information of Civil Service including values and the impact of work on UK citizens, high level exposure to senior civil servants with a chance to network and an introduction to the Fast Stream itself including career planning activities.

Two courses are run each year in London, and is managed by Civil Service Resourcing. If you have any queries, please contact ian.fogg@csresourcing.gsi.gov.uk

Title: GSG Induction – One day, non-residential



This course covers the structure and governance of the GSS, the UK Code of Practice, the UK Statistics Authority Strategy and career management



Statistical Officers and Data Scientists

0-6 months in post



Leeds, London and Newport

Title: The GSG Foundations Course – Two Days, non-residential



This course covers acquiring data, understanding customer needs, data analysis, working with policy, working with credibility, and presenting and disseminating data effectively



Assistant Statisticians, Statistical Officers and Data Scientists

6 - 12 months in post



Leeds, London and Newport

Analytical Skills

Title: Career Checkpoint Course – Half day to one day, non-residential



This course covers identifying learning gaps, guidance on applying for new posts and building networks



Statistical Officers and Data Scientists

18 months in post



Leeds, London and Newport

To make an enquiry or to enrol (a waiting list system is in place), please contact gss.capability@ons.gov.uk

Title: Continuous Professional Development (CPD) for Members of the GSG

CPD is the process of undertaking any relevant learning activity to maintain and develop an individual's competencies throughout their career. The learning may develop knowledge and/or skills, may take the form of structured or un-structured learning activities, and will develop the individual in both statistical and non-statistical aspects.

Members of the GSG are expected to maintain a CPD log, which documents the amount of statistical and non-statistical learning undertaken in a given year.

GSG members are broadly required to undertake 60 – 100 hours of CPD activity each year, of which 30 – 50 hours should be statistical. In the early stages of a career, the upper end of this guideline will generally be required.

It is recognised that in some years, an individual may focus more on non-statistical competencies, and their statistical development will therefore fluctuate. In order to take account of this, the minimum requirement for CPD is averaged over a five year period and this is automatically calculated by the CPD log (Excel).

Prior to interview, GSG members may be required to submit their CPD log for the sift to demonstrate how individuals are continuing to develop professionally. Learning activities can take on various forms, including:+

- ▶ Training courses
- ▶ Events
- ▶ Seminars
- ▶ Work-based learning/Reading
- ▶ Further academic learning, etc.

Category: Data Science - Introductory

Title: The Art of the Possible – ONS/GSS

Brief description: This is a 2 hour bite-sized taught course, aimed at Senior Managers (G7+) across the ONS and GSS. The course explains what new tools and techniques are covered by Data Science and the opportunities they present, so that leaders can provide a clear vision for their staff.

The course explores what data science is, how it is being used in government and explores the issues and challenges around building the data science approach and toolkits into your own teams. It will demystify the jargon and provide some practical tips about tools and technologies (and share what is different about them). It will consider the “data science mindset” and discuss what it means for the way we work. The course will also explore how others across government have used data science to improve outcomes.

Learning outcomes: By the end of the course, participants will:

- ▶ understand general views of how data science and analytics are revolutionising the way we process and analyse data;
- ▶ understand core concepts in data science (What is “data science”, “machine learning”, “natural language processing” etc.) and how these techniques are being used today in government;
- ▶ consider how data science introduces different tools and ways of working, and explore how managers with data scientists in their teams can best support them to add value; and
- ▶ be able to explain some common misconceptions.



This is a 2-hour taught session, at the London, Newport and Titchfield ONS sites



This is aimed at Senior Managers (G7+) from across the ONS/GSS



Two hours



London, Newport and Titchfield

Category: Data Science - Introductory

Title: Big Data & Data Science Explained – ONS/GSS

Brief description: This is a 60 minute bite-sized taught course, that aims to explain what big data and data science is through the use of case studies and examples from across the world and Government. The course aims to raise awareness of the concepts of Big Data and Data Science and to share what is possible.

Learning outcomes: By the end of the course, participants will:

- ▶ understand the definitions of Big Data and Data Science; and
- ▶ recognise its application in Official Statistics and elsewhere.



This is a 1-hour taught session, at the London, Newport and Titchfield ONS sites



This is aimed at any staff from across the ONS/GSS, who are keen to raise their awareness in this field



One hour



London, Newport and Titchfield

Category: Data Science – Computer Courses – E-Learning - Intermediate

Title: DataCamp online courses in R and/or Python – ONS/GSS

Brief description: DataCamp offers two levels of courses:

- ▶ • Free introductory courses; and
- ▶ • Premium intermediate and advanced courses

These e-learning courses in R and/or Python are available via the DataCamp online portal, allowing you to learn at your own pace. You do not need to have R or Python installed on your computer, as these courses run through a browser. Introductory courses are aimed at newcomers, while the premium courses are aimed at those wishing to improve their coding or data science skills.

Learning outcome: There are currently over 80 different courses available through DataCamp including:

- ▶ Importing and Cleaning Data;
- ▶ Data Manipulation;
- ▶ Data Visualisation;
- ▶ Probability and Statistics;
- ▶ Machine Learning;
- ▶ Applied Finance; and
- ▶ Reporting.

(Please see www.datacamp.com for full details)



E-Learning via an online virtual browser. Study is undertaken at participant's own pace



This is aimed at analytical staff from across the ONS and GSS, who are keen to develop R and/or Python programming skills

One of the courses can be successfully completed within 4 – 6 hours, depending on your level of coding ability and the course chosen.



Premium courses can be accessed for free by applying to Learning Academy. Seats are allocated on a 3 weekly basis, enabling you to work your way through as many courses as you can in this time. After your 3 week allocation, your seat is returned for the next person. You may rejoin the waiting list as many times as required



Flexible as delivered online

Contact Us

Email

If you require further information about all training and development events, or wish to express an interest in an event, please email: learning.academy@ons.gov.uk or gss.capability@statistics.gov.uk

Booking on live events

The majority of training is advertised through Eventbrite. Register with Eventbrite to view courses for 2018 here: www.eventbrite.co.uk

