Ensembl: Filmed browser workshop

Emily Perry [1]

- DNA & RNA
- Beginner
- > 3 hours

UPDATE: The new browser webinar series [2] is here. This new course consisted of live webinars over 7 weeks, which were recorded and the videos posted online, along with exercises to let you practice using Ensembl. The new course has replaced this one with more up-to-date Ensembl information.

Learning objectives:

- Understand what Ensembl is and where the data come from
- Know how to access and navigate the Ensembl homepage
- Be able to search the Ensembl browser with a gene, location (a region of a genome), or polymorphism of interest
- Know how to explore a region on a genome, a gene and a transcript
- Understand where to view gene trees, sequence variation, and possible regions involved in gene regulation in Ensembl
- Be able to view a sequence for a gene, protein, or a genome of interest
- Understand where the genes come from
- Understand the different ways the results are presented in Ensembl (including the gene, location, transcript and variation tabs)
- Be able to export Ensembl data quickly and easily with the browser and BioMart

How to take this course

This course makes use of lecture material from a one-day course that took place at the EBI in January 2013. This course is presented by Emily Pritchard, Giulietta Spudich and Denise Carvalho-Silva from the Ensembl Outreach Team.

If you see this video icon, you will be able to each a video of the lecture, presented in Mediasite [3] format.

The slides for each lecture are also available as pdf files for you to study. Lecture links will open in a new tab and pdfs will open in your default pdf viewer (eg. Adobe Acrobat or Apple Preview).

The lectures have associated exercises and answers for you to do in your own time.
This course was recorded using Ensembl version 70. If you are doing this course when a new Ensembl has been released, you may wish to use our archive site for version 70 [4]. Note: you can use the live site [5], but answers and views may have changed.

UPDATE: The new browser webinar series [2] is on its way. This new course will be consist of live webinars over 7 weeks, which will be recorded and the videos posted online, along with exercises to let you practice using Ensembl. Once the new course is complete, this course will be taken down as the new course will provide all the same content, just more up-to-date.

Find out about hosting a similar workshop [6] at your institute.

All exercises from the coursebook used are broken up and presented within this course. However, if you prefer, you can download the complete coursebook from the January 2013 course here. [7]

If you would like to jump straight to a specific section in the course please use the left-hand menu to navigate.

**Introduction to Ensembl**

This presentation has now been replaced by the new online browser course [2]. The first two sections: Introduction to Ensembl [8] and Ensembl Genes [9] cover the content of the first presentation and walkthrough.

Exercises to practise what you've learned are available in the new course.

**A walkthrough of the browser**

This demo has now been replaced by the new online browser course [2]. The first two sections: Introduction to Ensembl [8] and Ensembl Genes [9] cover the content of the first presentation and walkthrough.

Exercises to practise what you've learned are available in the new course.

**Exporting data via BioMart**

This talk has now been replaced by the new online browser course [2]. The third section, Data export with Biomart [10], covers the same content.
Exercises to practise what you've learned are available in the new course.

**Variation data in Ensembl**

This talk has now been replaced by the [new online browser course](http://www.ebi.ac.uk/training/online) [2]. The fourth section, [Variation data in Ensembl and the Ensembl VEP](http://www.ebi.ac.uk/training/online) [11], covers the same content.

Exercises to practise what you've learned are available in the new course.

**Regulation data in Ensembl**

This talk has now been replaced by the [new online browser course](http://www.ebi.ac.uk/training/online) [2]. The sixth section, [Finding features that regulate genes – the Ensembl Regulatory Build](http://www.ebi.ac.uk/training/online) [12], covers the same content.

Exercises to practise what you've learned are available in the new course.

**Your feedback**

Please tell us what you thought about this course. Your feedback is invaluable and helps us to improve our courses and thus enhance your learning experience.

**Get help and support on Ensembl**

Questions or any comments about Ensembl or this course? [Contact Helpdesk](http://www.ebi.ac.uk/training/online) [13].

**Tutorials**

- Check out our [YouTube](http://www.ebi.ac.uk/training/online) [14] or [YouKu](http://www.ebi.ac.uk/training/online) [15] channel.
- Try out an [Ensembl tutorial](http://www.ebi.ac.uk/training/online) [16]. There are videos and coursebooks on a variety of subjects.
- See if your question has already been answered in the [Ensembl FAQs](http://www.ebi.ac.uk/training/online) [17].
- Have a look at the [Ensembl Glossary](http://www.ebi.ac.uk/training/online) [18].
- View [technical documentation on Ensembl](http://www.ebi.ac.uk/training/online) [19].
- Visit the full 3 hour course on Train online: [Ensembl: Browsing chordate genomes](http://www.ebi.ac.uk/training/online) [20]

**Support**

- If you cannot find the answer to your question, [contact the Ensembl helpdesk](http://www.ebi.ac.uk/training/online) [21].
If you are using Ensembl programmatically, our dev list [22] is a community of Ensembl developers where you can ask and answer questions. If you thought this course was useful, and you and your colleagues would like to experience it in the flesh, host an Ensembl workshop [6] at your institution.

Contributors

This course was put together using talks and exercises by:

- Emily Pritchard
- Giulietta Spudich
- Denise Carvalho-Silva

We would like to thank the participants of the course, who allowed us to film.

A big thanks to Mark Adams for filming and processing the lectures.

The online course was compiled by Emily Pritchard.

Contributor profiles [23]

Emily Perry [1]

EMBL-EBI
Ensembl Outreach Project Leader

Emily is the Outreach Project Leader for Ensembl: she is responsible for the team that teaches workshops, creates training materials and help pages, manages social media, answers helpdesk queries and aids development of new tools for the resource. Emily started at EMBL-EBI as an Ensembl Outreach Officer in September 2012 and became the Project Leader in March 2015. Before working at EMBL-EBI, Emily did her PhD in molecular biology at the MRC Human Genetics Unit in Edinburgh, then worked for the University of Edinburgh's SCI-FUN group, touring Scottish secondary schools with an interactive science roadshow.
Giulietta M. Spudich [24]

EMBL-EBI
Outreach project leader, Ensembl

Giulietta was the outreach project leader for the Ensembl at EMBL’s European Bioinformatics Institute (EBI). The Ensembl project freely provides high quality annotation such as genes, sequence variation, and whole genome alignments across mainly vertebrate genomes. She leads a small team that organises and delivers training courses worldwide, and supports scientific communication about the project.

Before she started working with the Ensembl project in 2006, she obtained her PhD in Susan Marqusee's lab at UC Berkeley in 2002. She ‘hopped the pond’ to carry out postdoctoral research in biochemical studies of Myosin VI at the MRC-LMB in Cambridge, UK (2002-2006).

Denise Carvalho-Silva [25]

EMBL-EBI
Ensembl Outreach Officer

Denise joined the Ensembl Outreach team in September 2011 and has been training and supporting worldwide communities on the usage of both Ensembl and Ensembl Genomes databases through workshop, social media and helpdesk. She got a PhD degree in Biochemistry (Universidade Federal de Minas Gerais, Belo Horizonte, Brazil), a post-doctoral training in Genetics (Australian National University, Canberra, Australia) and was a Research Associate in Human Evolution at the Wellcome Trust Sanger Institute (Hinxton, UK). She has also worked as a Senior Computer Biologist in the HAVANA team on the GENCODE, EUCOMM and Pig Genome projects before joining the EMBL-EBI.

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