This course

(Self-)Quiz

- Have you ever used **data** to make decisions in your life?
- Have you ever heard the term "**Data Science**"?
- Have you ever written a line of **computer code**?

More stats than a GIS course… more GIS than a stats course

With a few twists!

Philosophy

- (Lots of) **methods** and techniques
  - General overview
  - Intuition
  - Very little math
  - Lots of ways to continue on your own
- Emphasis on the **application** and **use**
- Close connection to "**real world**" applications

Format

11 blocks with:

- **Concepts**: videos + slides, readings
- **Hands-on**: concepts in (interactive) action
- **Do-It-Yourself**: practical material to do on your own

Content

- **Blocks A-C**: "big picture" content + computational tools (learning curve)
- **Blocks D-H**: "meat" of the course (lots of concepts packed)
- **Blocks I-K**: prepare an awesome Computational Esssay

Logistics - Website

https://darribas.org/gds_course

ENVS363/563

Contents

Geographic Data Science

Welcome to Geographic Data Science, a course taught by Dr. Dani Arribas-Bel in the Autumn of 2020 at the University of Liverpool.

The timetable for the course is:

- **Lectures**: TBA
- **Computer Labs**: TBA

Locations

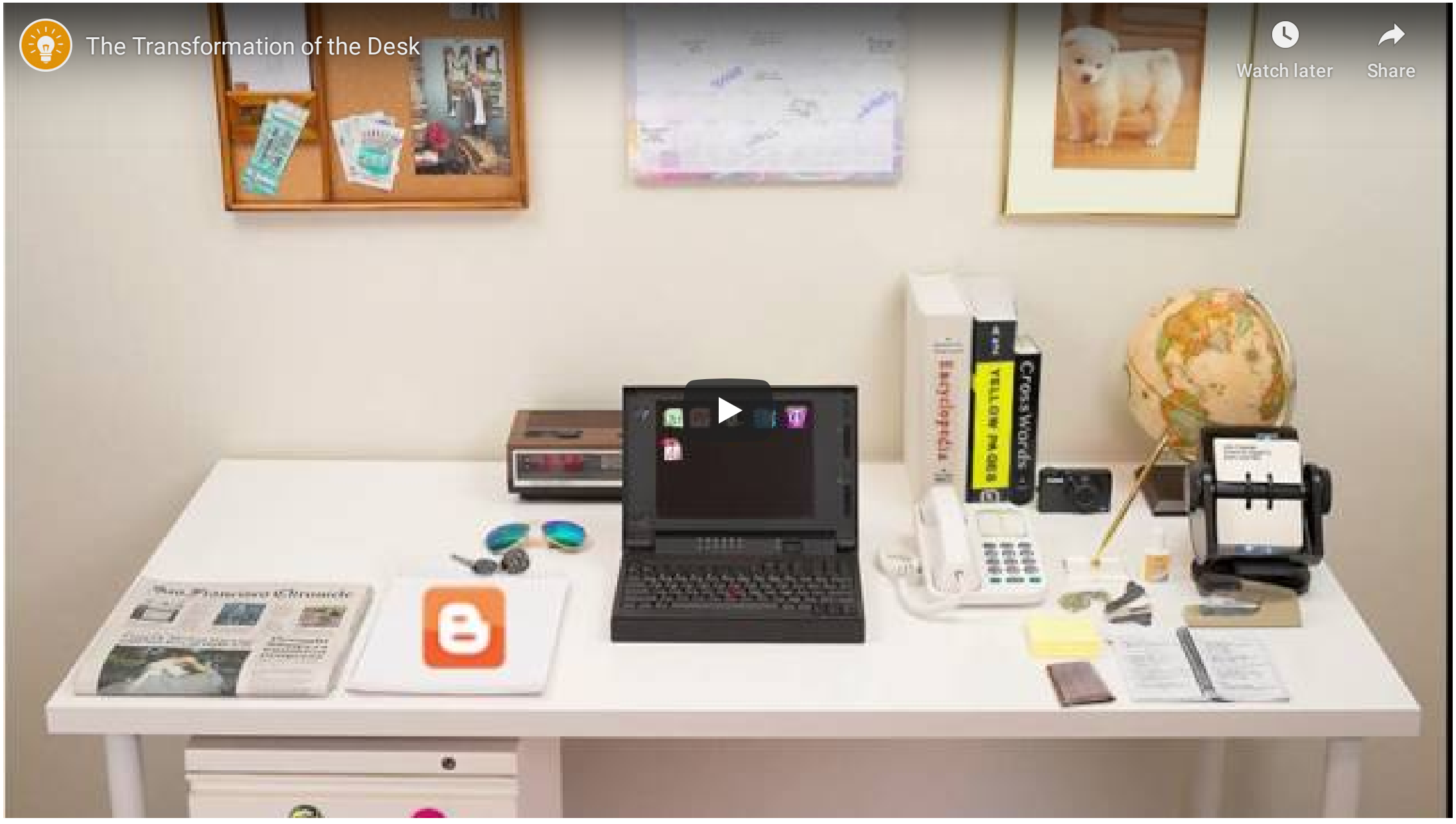
- `ERB-ERT`: Eleanor Rathbone Building - Eleanor Rathbone Theatre [URL]
- `CTL-6-PCTC`: Central Teaching Labs, PC Teaching Centre (Red, Green, Blue) [URL]

Logistics – Teams [URL]

Team

Team

Code



Driving Vs automobile engineering

Python

Python

- **General purpose** programming language
- "Sweet spot" between *"proof-of-concept"* and *"production-ready"*
- Industry standard: **GIS** (Esri, QGIS) and **Data Science** (Google, Facebook, Amazon, Netflix, The New York Times, NASA…)

Self-directed learning

Prepare

- This is a **flipped class**: it's like a gym, the "subscription" does not make you fit
- **I won't** be leading/lecturing on computer material
- **Bring** questions, comments, feedback, (informed) rants to Teams/class
- **Teams**, **Teams**, **Teams**
- **Collaborate** (it's **NOT** a zero-sum win!!!)

More help!!!

This course is much more about "**learning to learn**" and **problem solving** rather than acquiring specific programming tricks or stats wizardry

- Learn to **ask** questions (but don't expect exact answers all the time!!!)
- **Help** others as much as you can (the best way to learn is to teach)
- **Search** heavily on Google + Stack Overflow

Assignments

Assignments

- In-lab computer tests: W.5 (25%) and W.10 (25%)
- Computational essay (W.12, 50%)
  - Equivalent to 2,500 word
  - Report (*notebook*) with **code**, **figures** (e.g. maps), and **text**
- Discussion board (5%)

NOTE: recommendation letters only for great students (**>70**)