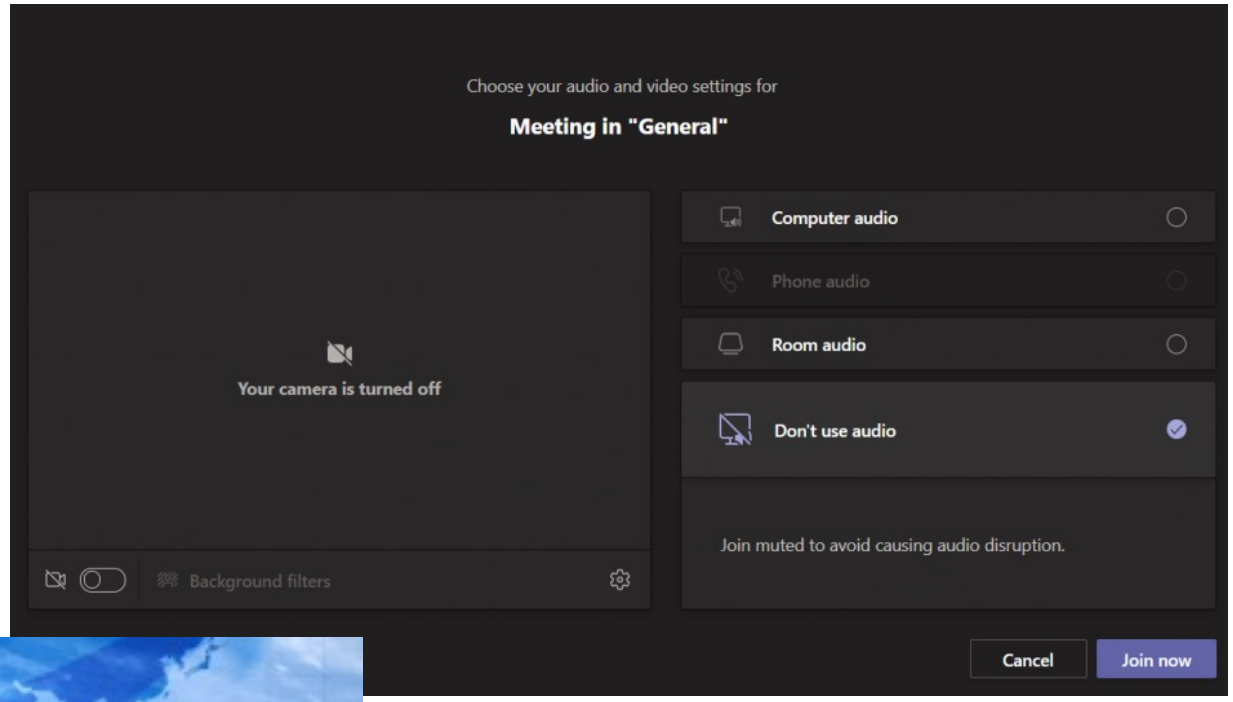
‘Remotely Practical’

Data, Design and Doing: Virtual Practical Skills for all the Sciences

Miriam Gifford, Leanne Williams and many, many others

Inspiration for Remotely Practical

Lab teaching



Online everything everywhere

WIHEA project funding!

How to help with practical skills, in an online setting?

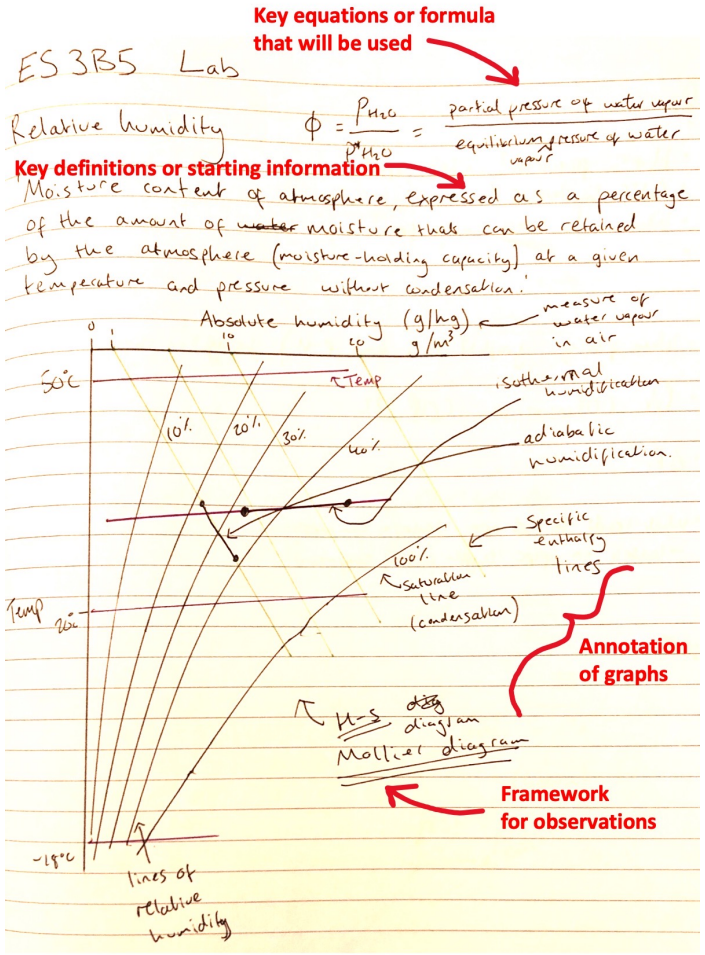
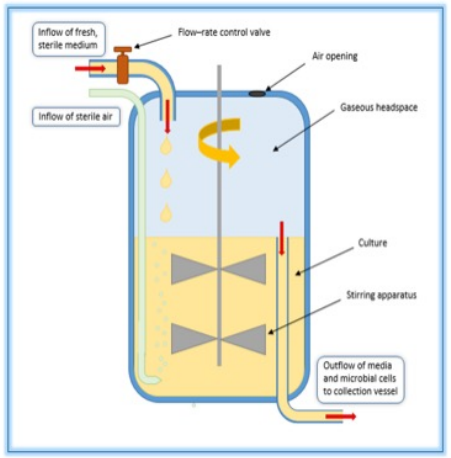
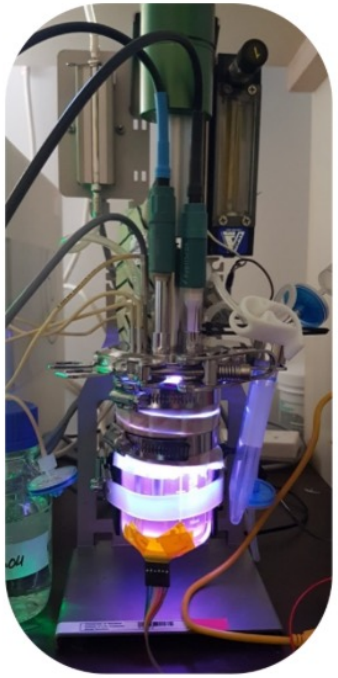
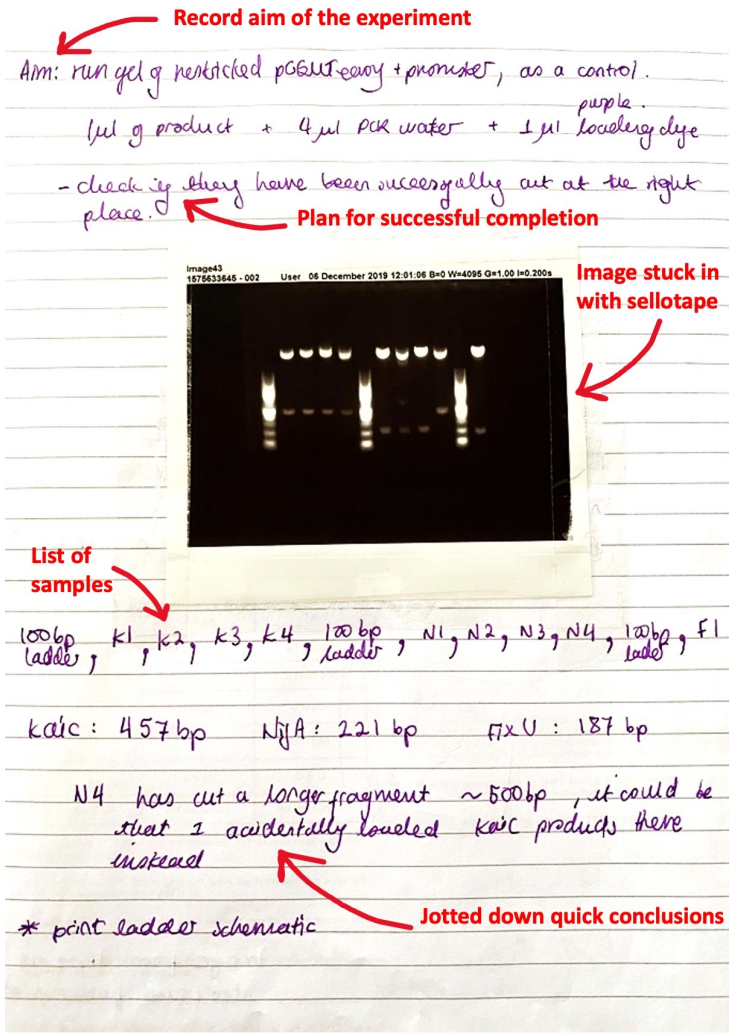


Image of chemostat setup



A chemostat in the lab





The key? Student-driven project working

Hypotheses and Experiments?

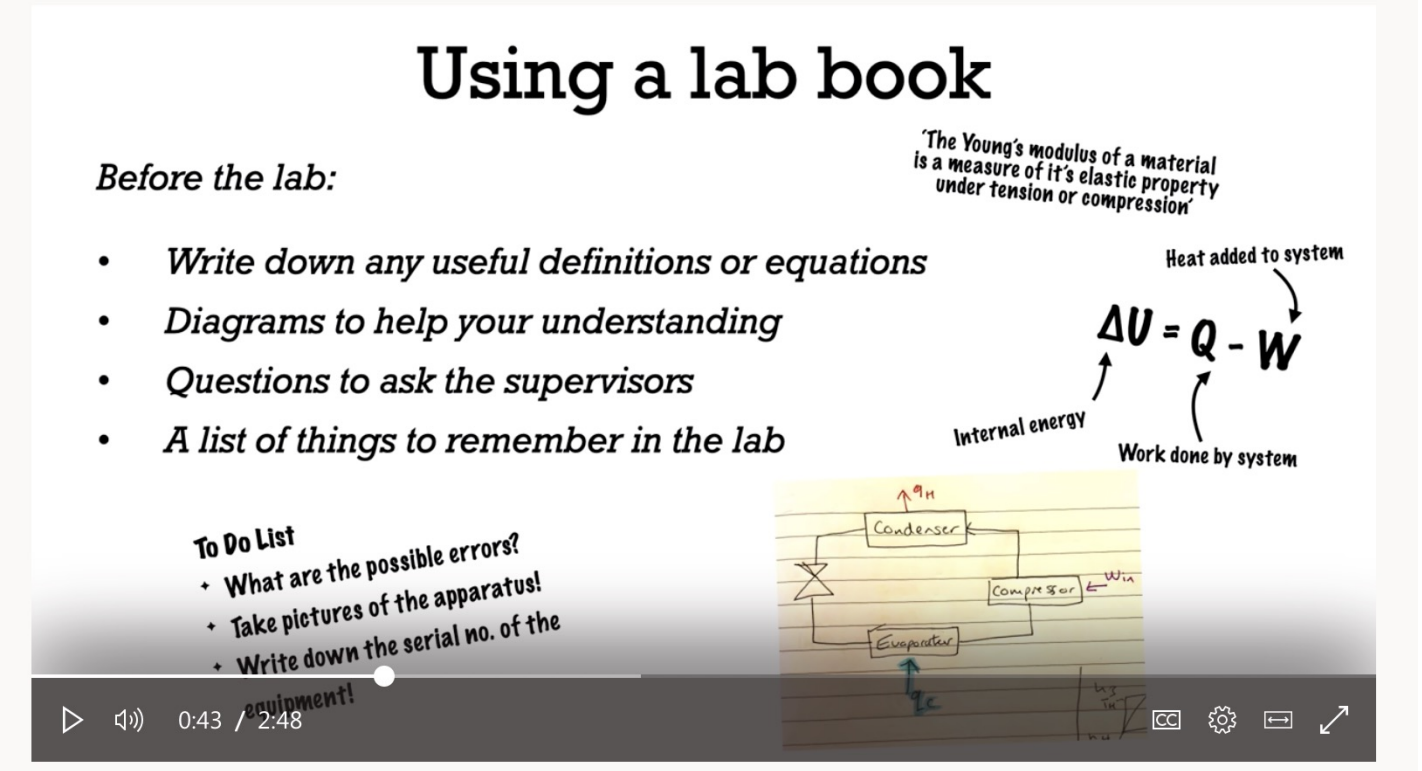
Discussion amongst students

Tasks and ownership

Mentoring from postgraduates

Core skills across all of the sciences?
… and bringing scientists together

Key – not for credit, and flexible timing



Remotely Practical, by the student developers

An online unit in a lab-book style

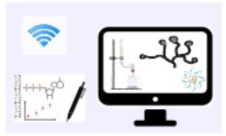
WARWICK

Search...

Design, Data & Doing: Virtual Practical Skills for all the Sciences (20/21)

Dashboard / Courses / Science / School of Life Sciences / 2020/21 / LF-DDDVPSS-20/21

Welcome



The aim of this unit is to expand your understanding of scientific experiments using a variety of disciplines.

This unit focuses on fundamental problem solving concepts to help you to ask a scientific question, formulate a hypothesis and design an experiment to test it, using problem-based learning scenarios.

To build your skills, you will be given a lab brief (similar to what you would get in a practical session) with a completed dataset, and have to produce lab book and lab report sections.

This page provides information and resources for the unit.

To complete your study, please work from the Mahara page (using the 'How-to guide for Mahara' (below) to get started).

Module Convenor: Miriam Gifford miriam.gifford@warwick.ac.uk

What is this unit all about?

What's this unit all about? Click to watch a video and hear from some of our students

What's the idea behind this unit? Click to hear from staff who designed it

Introduction to the unit

by Remotely Practical

Introduction to: Design, Data & Doing: Practical Skills for Science

The aim of this unit is to expand your understanding of scientific experiments using a variety of disciplines.

This unit focusses on fundamental problem solving concepts to help you to ask a scientific question, formulate a hypothesis and design an experiment to test it, using problem-based learning scenarios.

To build your skills you will be given a lab brief, similar to what you would get in a practical session, with a completed dataset, and have to produce lab or log book and lab report sections.

Guide to using Mahara

DDD-short-mahara-guide-for-students.pdf

Skill development over 4 sessions

Over four weeks, from week 2 of term 1 we will release content to help you understand and practice a series of important concepts and skills. This Mahara will act as your textbook, notebook and lab book, providing you a lasting revision guide and portfolio.

Session 1 will explore experimental design and how to understand and manage experimental error. Develop your understanding, summarise and reflect, then then test your knowledge and get instant feedback.

Session 2 will help you learn how write, use and interpret a lab or log book, and then how this is turned into a lab report. Develop your understanding, summarise and reflect, then then test your knowledge and get instant feedback.

Session 3 will apply knowledge from session 1 to the understanding of practical science with a real-world problem – how to know what data is needed to address a hypothesis, how to use this data embed it into a problem and how to understand its limitations.

Session 4 will apply knowledge from session 2 to enable you to tackle the real world problem and write up your lab book. You will receive feedback on your work from tutors to help you complete the unit.

This is what you need to do ...

Work through the sessions from 1 to 4

Each week a new session will be released with an introduction to explain what you need to do and how long it take to complete. Sessions 1 and 2 end with quizzes to get quick feedback. Your work from sessions 3 and 4 will be assessed by a tutor who will provide feedback within 2 weeks from submitting your Mahara portfolio.

During the unit you can meet peers via the online Moodle forum linked to this Mahara. At the end of the unit you can also provide feedback the unit.

After the unit .... want to do more? By working in a cross-departmental peer group you can tackle a new problem to reach the second level for this unit.

This unit should take around 12 hours to complete over four weeks.

Next steps for Remotely Practical

Developing the ‘higher’ level of the unit where students work as a cross-department team on a new real-world problem.

New units in ‘Getting Science Done’ and ‘Coding for Sciences’

A first STEM grand challenge!

Interested? Email: miriam.gifford@warwick.ac.uk

And many thanks to the whole team!

- School of Life Sciences: Robert Spooner, Nic Bullen, Kevin Moffat, Lorenzo Frigerio, Jasmin Kaur (Y4); student lead; Zainah Adam (Y2); Chiara Lia Perrone (Y2); Sophie Martucci (PGR)
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- Engineering: Chloe Agg, Elia Gironacci, SamWoodcock (Y3); Udokama Iwumene (Y4)
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- Rebecca Freeman, Dean of Students

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