



**SUPERLABS**

Endless Possibilities

# Planning your Superlab Practical Classes

# Teaching in the Superlabs

Welcome to teaching in the Superlabs!

You're probably starting to think about what teaching in these new mega spaces might look like and wonder how and what you can implement in these new environments.

This framework presentation is designed to get you thinking about the possibilities, show you what the AV systems in the labs can do for you and lastly to let you know about some of the resources we are developing to help you deliver some exceptional practical classes.

It's time to think big and think differently about the way you can deliver material and engage larger groups of students than ever before.

Welcome to this exciting journey. Feel free at any time to reach out for ideas or assistance from the CLT team during the transition and regularly check in to the website that we are developing to gain access to resources as they become available.

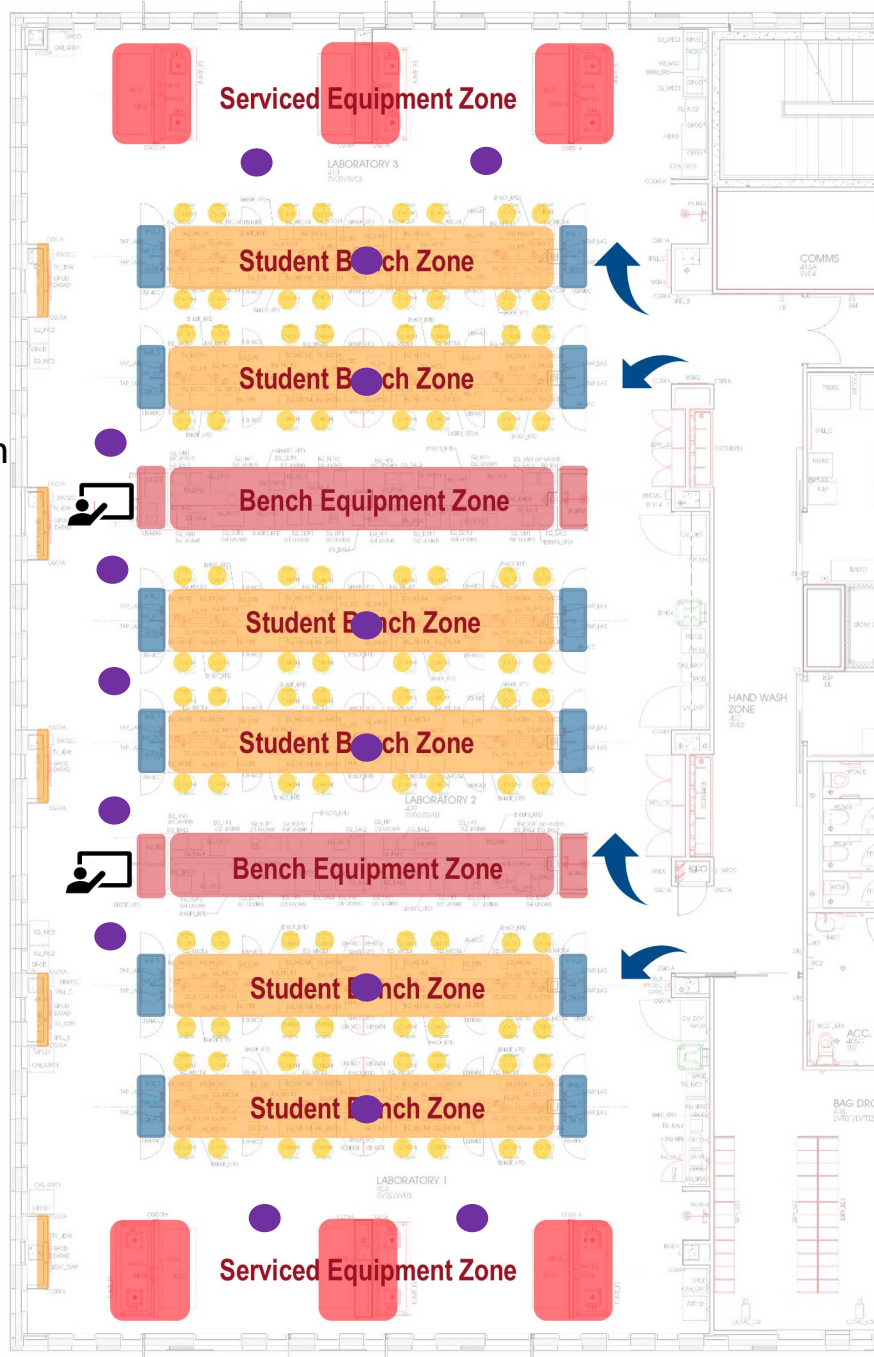
# The Superlab Environment - What will it look like?







- ▶ Not unlike a “spanned” classroom
  - ▶ Spanning from one end of the lab to the other rather than from one location to another
  - ▶ Lab benches instead of lecture seating
- ▶ Allows for reduction in repeats of classes by increased class sizes
- ▶ Increases consistency of information delivered
  - ▶ All students see the same thing at the same time
  - ▶ All critical information and demonstrations can be delivered at the same time by the same educator
- ▶ Relies on developing techniques using the extensive AV systems to ensure effective delivery



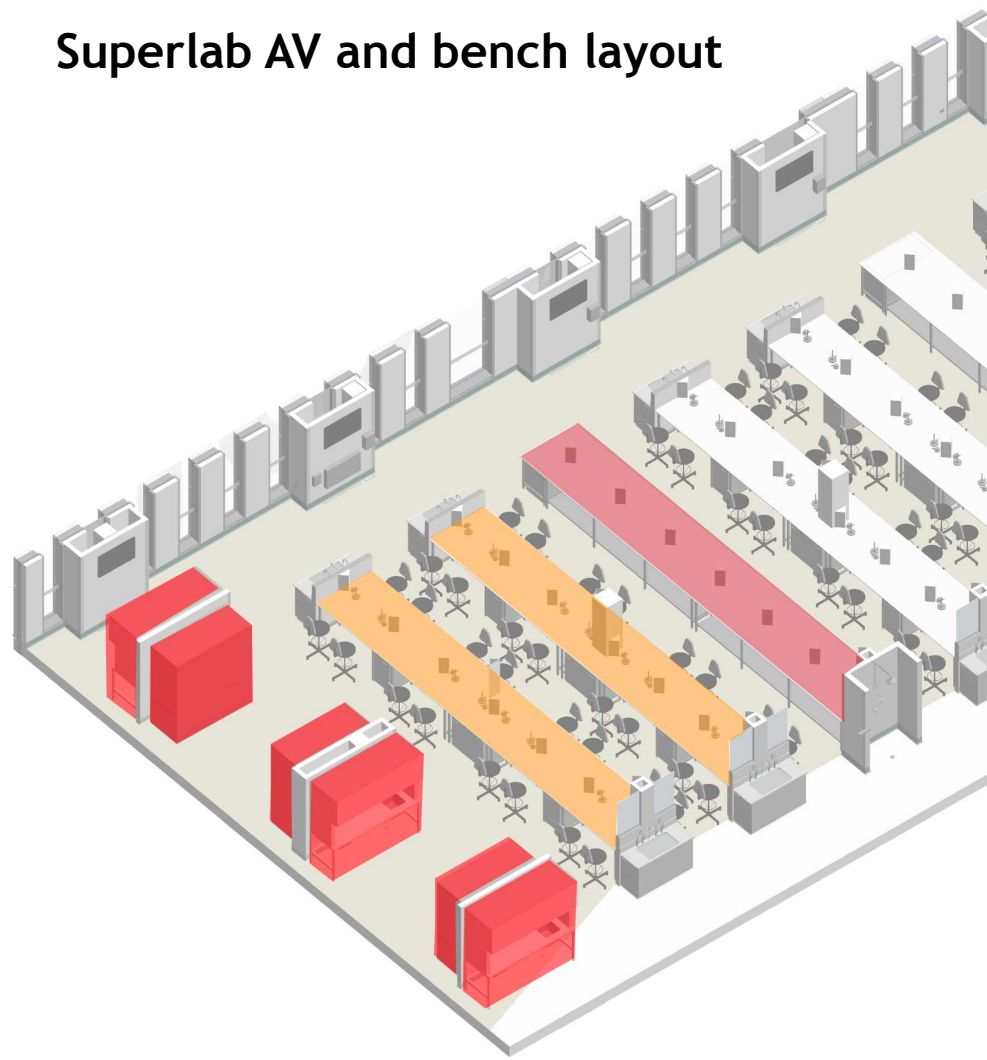
# Lab structure from an AV perspective

- ▶ Six flat screens positioned across the length of the room
- ▶ Two demonstration stations - each equipped with a resident PC, 2 Pan Zoom cameras (one for whiteboard capture) and a document camera
- ▶ Lapel and gooseneck microphones for educators and the ability to zone the audio in the room appropriately
- ▶ Six pan zoom cameras positioned above each workbench of 16 students with capability to zoom to individual workstations
- ▶ Four pan zoom cameras for displaying work in fumehoods or biosafety cabinets
- ▶ 96 Surface Go units (1 per student) to allow recording of information and the delivery of paperless lessons in the laboratory setting



-  PTZ Camera
-  Flat Screen
-  Demonstration Station
-  Surface Go
-  Sink
-  Fume Hoods and Biosafety Cabinets

## Superlab AV and bench layout



# Where Do You Start?

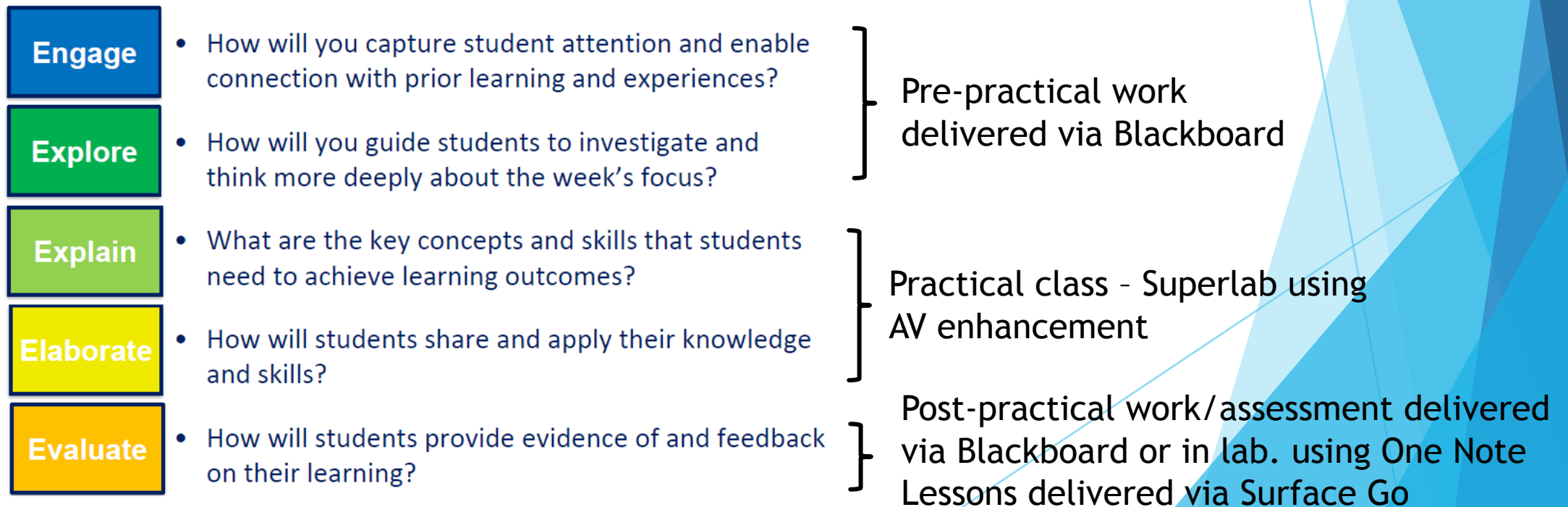
## Class Configuration

- ▶ Each superlab can be used in the following formats:
  - ▶ A single cohort of 96 students (whole lab)
  - ▶ Two 32-40 student groups or one 32 and one 64 student group simultaneously
- ▶ Determine the best configuration and staffing for your unit
  - ▶ Consider whether you can reduce the number of class repeats by increasing your class size
  - ▶ Consider the most appropriate staffing (TA:student ratio) for both effective delivery and student safety
    - The layout of the lab and the positioning of the AV suggests a ratio of 1:16 would be advantageous and optimal for any of the formats

# Where Do You Start?

## Plan how you will deliver material incorporating AV technologies to enhance student engagement

- ▶ Lessons can be structured and planned very similarly to the spanned classroom scenario
- ▶ Structure material into Pre-practical (delivered pre lab.), Introductory Material (delivered in lab.), Practical and Post-practical





# Pre-practical material

- ▶ Should be delivered prior to the practical class via Blackboard and include material that engages the student and peaks interest in the application of knowledge gained from other activities (i.e. lectures)
- ▶ Material should tie the practical to the learning outcomes supported in lectures/workshops and demand the use of pre-knowledge
- ▶ Should introduce the practical material to be covered during the upcoming practical session
- ▶ Could include the following:
  - ▶ A revision quiz to consolidate basic knowledge pertinent to the application of theory in the practical setting
  - ▶ A short video showing some of the basic techniques to be used in the practical
  - ▶ Safety information to be considered when performing the techniques in laboratory
  - ▶ Demonstrations filmed using the Pan Zoom cameras to show students how to perform specific techniques

Engage

Explore

# Introductory Practical Material -delivered in lab setting

- ▶ Should consist of material focused on assisting the students to successfully complete the practical session
  - ▶ Overall outline of practical session
  - ▶ Safety information
  - ▶ Practical demonstrations
- ▶ Could be delivered using:
  - ▶ Whiteboard (via Pan Zoom)
  - ▶ Flat screens (via computer presentation)
  - ▶ Document Camera

Explore

Explain

# Practical Session

- ▶ Determine facets of the practical that could be assisted by using the AV systems in the room (try to incorporate at least one into your lesson)
  - ▶ Demonstrations by staff and/or students using the Pan Zoom (increases consistency of teaching and increases interaction between students)
  - ▶ Projecting images using the document camera (assists in reaching all students with information simultaneously)
  - ▶ Projecting images from equipment (e.g. microscopes) to show student results across the room (increases student engagement and involvement)
  - ▶ Display images of staff/students performing techniques/reactions in fume hoods or biosafety cabinets
  - ▶ Use the Surface Go to deliver an interactive One Note Lesson to allow students to document results (be brave and go paperless)

Explain

Elaborate

# Post-Practical Evaluation and Revision

Evaluate

- ▶ Post-practical material could take the form of:
  - Revision or assessment quizzes delivered via Blackboard following class
  - Completion of a One-Note Lesson in the classroom on the Surface Go for the educator to review
  - Completion of a practical report for submission for assessment

# How can we support you?

## ▶ Support for the use of the AV systems

- ▶ We are developing a range of “How to” and QuickStart Guides and Reference Cards covering the use of the basic AV systems in the labs
  - How to zone the laboratory AV appropriately for (32 + 64 vs 96 space)
  - How to use the lapel microphones
  - How to connect to large flat screens
  - How to connect to document cameras
  - How to connect to Pan zoom cameras
  - How to connect and display from individual equipment (e.g. microscopes)

# How can we support you?

- ▶ **Support for the development of lesson plans which use the AV to enhance student engagement**
  - ▶ We are developing exemplar lesson plans similar to those you can already access for spanned classrooms, but will have a focus on the incorporation of AV technologies to assist the delivery of practical information
  - ▶ We can provide ideas for which facets of your superlab class would be made better by the use of the AV systems and how you can deliver this

# How can we support you?

- ▶ **Watch our Webpage and access the resources as they become available**
  - ▶ Regularly check webpage for Superlabs on the Learning Intranet when it “goes live” (06/09/19)  
ECU Home/Learning Intranet/Learning Technologies/Superlabs
- ▶ **Communicate your needs and let us assist you to transition**
  - ▶ Join one of our Microsoft Teams to communicate, collaborate and share ideas and thoughts