



Vicphysics Teachers' Network Units 3 and 4 Course Planning Day – 10th Nov 2023

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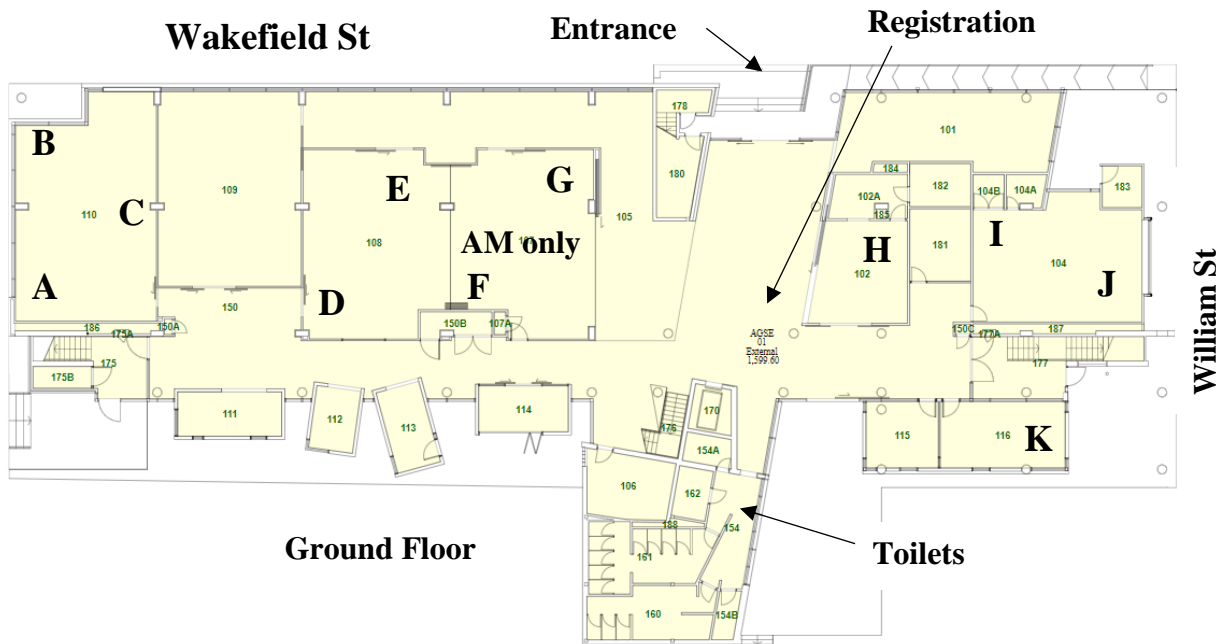
Program

		Room
9:00	Welcome	202
9:10	School-based Assessment for Unit 3 and 4 by Maria James, VCAA Science Manager	202
10:00	Small Group Discussion on Assessment Tasks, in particular consideration of examples, completion of a draft, etc	A - L
10:45	Morning Tea	Foyer
11:15	Presentation on new content in the Study Design, in particular additions to Special Relativity with Theo Hughes, Cornish College	202
12:00	Small Group Discussion on teaching order, weeks per AoS, etc	A - L
12:45	Lunch	Foyer
1:30	Presentation on styles of practical activities with Rachael Gore, Albert Park College	202
2:15	Small Group Discussion on selecting practical activities	A - L
3:00	Finish of In-Service	

Ancillary Event hosted by the Australian Institute of Physics Victorian Branch

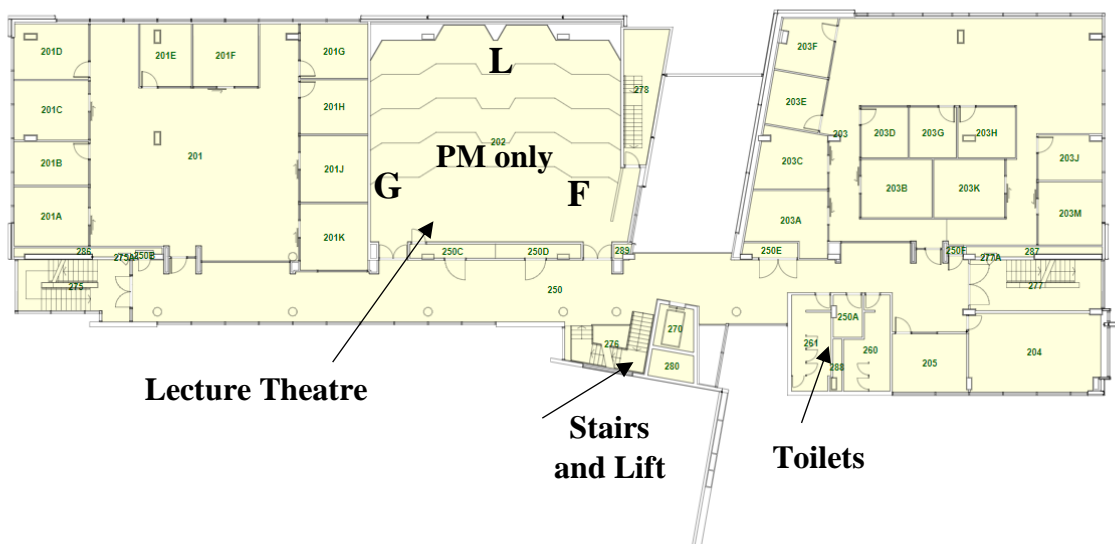
3:30	Afternoon tea provided by AIP Victorian Branch (need to register)	Foyer
4:00	Public lecture on 2023 Nobel Prize in Physics by Prof Jeff Davis of Swinburne University. (One hour)	202

Swinburne University AGSE Building



Ground Floor

Level 2



Lecture Theatre

Stairs and Lift

Toilets

**Rooms for Groups A to L are indicated on the map.
Groups F and G will need to move for the third session.**

Small Group Discussions on Units 3 and 4 Course Planning

First session: Assessment tasks

Introduction

The four tasks for Unit 3 and Unit 4 AOS 1 are:

- A:** application of physics concepts to explain a model, theory, device, design or innovation
- B:** analysis and evaluation of primary and/or secondary data, including data plotting, identified assumptions or data limitations, and conclusions.
- C:** problem-solving, applying physics concepts and skills to real-world contexts
- D:** comparison and evaluation of two solutions to a problem, two explanations of a physics phenomenon or concept, or two methods and/or findings from practical activities.

Each group will be given two of these. You can choose one to work on, and then the other if your group has time.

You will be supplied with resources that includes starting material that was prepared by groups at PHYSCON 2023 earlier this year. They will be for your group's two tasks and will cover most Areas of Study.

The group's work :

With your chosen task you select an Area of Study and work with the corresponding starting material to produce an assessment task.

Suggested steps:

1. Using the performance descriptors for that Area of Study and the Key Science skills, identify which content and skills will be assessed in the task.
2. Generate corresponding questions for the students to answer.
3. Evaluate the questions for their capacity to discriminate and enable a range of performance.

Resources available:

- Each person: Starting material for two of the four tasks and a worksheet
- Each table: Performance descriptors for Areas of Study and Key Science Skills, Strategy for generating a rubric for an assessment task
- On-line: Sample Assessment Tasks for each of the four types.

Second session: Scheduling content

Introduction: Some issues to consider: Teaching order of Areas of Study (AoS), Allocation of class time and Changes to units 4.

Suggested questions

1. Teaching order
 - a) Which AoS to start with? Is there a logical order among the AoS's?
 - b) When do you schedule Relativity? Part of Motion, after Electromagnetism, or in late Term 3?
2. Amount of class time for each Area of Study
 - a) The three AoS's in Unit 3 are equally weighted in SAC contribution, should they be comparable in class time?
3. Unit 4 has only two AoS's, with AoS 1 having six topics.
 - a) How much class time will AoS 1 require?
 - b) With Light now in Unit 1, will some revision be required before doing Unit 4 Light?

Resources available

- Each table: Copies of a course plan
- Online: Table comparing new and old content in Unit 3 and 4

Third session: Practical activities

Introduction

Unit 3: A minimum of fifteen hours of class time should be devoted to student practical work and investigations across AoS's 1, 2 and 3.

Unit 4: A minimum of five hours of class time should be devoted to student practical activities and investigations in AoS 1. For AoS 2, a minimum of ten hours of class time should be devoted to designing and undertaking the student-designed scientific investigation and communicating findings.

Suggested Questions:

1. Check the list of Units 3 and 4 practical activities on the table.
 - a) Which ones do you do?
 - b) Which other ones would you consider?
 - c) Which ones can form the basis of an assessment task?
2. Which pracs are opportunities to teach skills such as:
 - graphing,
 - linearising data,
 - interpreting graphs and
 - reproducible and repeatable results.

Resources available

- Each table: Possible Practical Activities
- Online: Short Pracs by Colin Hopkins, Webpage for each AoS