



School of Physics

PHYS3118

Quantum Physics of Solids & Devices

School of Physics

Faculty of Science

T2, 2021

1. Staff

Position	Name	Email	Consultation times and locations	Contact Details
Course Convenor	Prof Sven Rogge			

- Information literacy

2.3 Course learning outcomes (CLO)

The coupling of Solid State Physics and Quantum Physics is the basis for virtually all technological aspects of modern life. This course aims to give an overview of the basic concepts of solid state physics, and introduce a number of essential physics concepts that underlie the operation of all electronic, magnetic and superconducting devices.

Learning outcomes:

1. Describe the essential concepts of basic solid state physics and methods for dealing with the structural, thermal and electronic properties of solids.
2. Explain the physics of particle-particle interactions in solids and the effects they produce, e.g., superconductivity, magnetism, etc.
3. Explain the physics of semiconductors and how this is translated into modern functional electronic and magnetic device structures.

2.4 Relationship between course and program learning outcomes and assessments

Course learning outcomes 1-3 are assessed in the 4 assessment tasks. These assessments are largely of a critical-thinking nature designed to determine students' ability to deploy acquired knowledge to new situations, which is a key graduate attribute for successful university graduates.

3. Strategies and approaches to learning

3.1 Learning and teaching activities

Assumed Knowledge

Pre-requisite(s): PHYS2111 or PHYS2110 and PHYS3113

Timetable

Lectures:

1x 2hr plus 2x (s) 3 (e) 2.9 (1) Tj 0.001 Tc -0.003 Tw 6.275 0 Tde5 (or) -1.3 (

5. Assessment

5.1 Assessment tasks

Course assessment comprises assignments, in-session test, laboratory and final examination.

Assessment task	Length	Weight	Mark	Due date (normally midnight on due date)
Assessment 1: Assignment 1	50 mins	20%		Monday 28 th June (Week 5)
Assessment 2: Assignment 2		20%		Monday 2 nd August (Week 10)
Assessment 3: Laboratory		10%		See above note regarding lab classes
Assessment 4: Final Exam	2 hours	50%		See Exam Schedule - TBA

Information about Special Consideration is available from <https://student.unsw.edu.au/special-consideration>

Further information

UNSW grading system: student.unsw.edu.au/grades

UNSW assessment policy: student.unsw.edu.au/assessment

6. Academic integrity, referencing and plagiarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at student.unsw.edu.au/referencing

Academic integrity is fundamental to success at university. A

