

Syllabus for Winter 2022

PHYS 4P61/5P61

Nuclear Physics

Course contents:

Intrinsic properties of nuclei, nuclear binding energy; qualitative treatment of shell model; alpha, beta and gamma radioactivities, nuclear fission, characteristics of nuclear reactions.

Requirements:

PHYS 2P50 (Modern Physics) and 3P70 (Introduction to Quantum Mechanics)

Textbook:

Basic, introductory reading is at [LibreTexts](#), [OpenStax 1](#), and [OpenStax 2](#).

Much, but not all of the homework will come from:

Nuclear Physics

Author: Lilley, John

ISBN: 9780471979364

Publisher: John Wiley And Sons

Lectures:

14:30-16:00 Mondays and Wednesdays in PLZ308

Tutorials:

No tutorials are scheduled. Please ask questions in office hours, by email anytime, or in lecture!

Instructor:

[Thad Harroun](#) (tharroun@brocku.ca)

Office hours:

M 12:00-14:00

Th 14:00-17:30

I have made these times available to be booked for in-person or private Teams meetings! See my [Bookable office hours](#) page.

The marking scheme:

Component	Weight
7 Homework Assignments	55%
1 Term Project (with 3 checkpoints)	25%
1 Final exam	20%

Term Project:

Details of the term project can be found among the course content on Brightspace, with due dates in the Calendar.

Final Exam:

The Final exam will be take home. It will be available here on Brightspace on the day of the final exam, and is due 4 hours later. An Honor Pledge must be accompanied on page 1, and all uploads must be received in time. Make sure your phone is charged, you are well practiced in creating a PDF document from your written notes, and that you have the ability to upload during the exam.

Notes:

Late assignments will be accepted for up to four days post due date, with a penalty of 20% of the total points. Missing assignments will be moved to a zero grade at the end of term.