Aalto University
School of Science

Introduction to Plasma Physics for Fusion and Space Applications, PHYS-E0461

Practices

- Lectures 2h/week (Monday, 14:15 – 16:00, M240 except the 1st lectures in Y228b)
- Exercises 2h/week (Tuesday 10:15 – 12:00, M140)

About the exercises:

- Problem set uploaded to MyCourses on Monday, 8 days before the corresponding exercise session:
  - About 4 ”regular” problems to solve
  - The 5th assignment requires thinking and explaining, e.g., some phenomenon related to plasma physics
  - The outcome of the 5th assignment has to be turned in *before* the following Monday’s lecture. Upload your story at the MyCourses *Assignments* page
- During Tuesday exercise session:
  - Student marks the problems he/she is willing to go through on blackboard
  - The correct solutions are worked out on the blackboard
  - Course assistant will give hints and answer questions about the next problem set

Recommended reading

By far, the most appropriate written material for this course is:

F. Chen: *Introduction to Plasma Physics and Controlled Fusion, Vol. 1 "Plasma Physics"*

(Vol. 2, "*Controlled Fusion*" was not, unfortunately, ever published.)

OTHER, VERY USEFUL MATERIAL:

Wesson: *Tokamaks.* This is the "Bible" for fusion plasma physics: in contains 'everything'. However, it is NOT a textbook but, rather, a reference document.

Fitzpatrik: *Lecture-notes-manuscript*

Well written text on basic plasma physics but generally with more advanced math. However, strongly recommended supplementary reading with discretion. PDF attached with author's permission.

Karttunen: *Plasmafysiikan perusteet*

Exams

First exam: Friday 21.10.2022 at 9-13, B-sali (Y203a)

Second exam: Wednesday 7.12.2022, A-Sali (Y202a)

How to determine your grade with course work:

- 50% from homework
- 50% from the two exams. Both exams have to be passed with 40% of the points