

Honours programmes in Physics — First semester 2012

(Currently still subject to minor changes!)

Coordinator: Kristian Müller-Nedebock

12.01.2012

1 Term schedule (2012)

1.1 Overview — 1st Semester 2011

Week	No.	Devoted to	Important dates
30.01–03.02	M.1(See 1.2)	Honours welcoming, Mathematical methods lectures	Welcoming 09:00 on 30.01
06.02–10.02	M.2	Mathematical methods lectures, Faculty Post-graduate workshop	Faculty of Science Post-graduate workshop (Sec. 6) on 07.02
13.02–17.02	L1.1 (See 1.3)	Normal lectures Term 1 start	Feedback discussion of coordinator with students on 1.03 (See 4)
20.02–24.02	L1.2	Normal lectures	
27.02–02.03	L1.3	Normal lectures	
05.03–09.03	L1.4	Normal lectures	
12.03–16.03	L1.5	Normal lectures	
19.03–23.03	L1.6	Normal lectures	
26.03–30.03	L2.1 (See 1.5)	Normal lectures Term 2 start	Public Holiday on 21.03, Feedback discussion of coordinator with students on 22.03, <i>For lecturers: Question papers for test week with internal moderator by 23.03</i>
02.04–06.04		Mid-semester break	
09.04–13.04	T1.1 (See 1.4)	Test week (no lectures)	Public Holiday 09.04
16.04–20.04	L2.2	Normal lectures	<i>For lecturers: Marks discussion on 20.04</i> Public Holiday on 27.04, Feedback discussion of coordinator with students on 26.04 Public Holiday on 1.05 <i>For lecturers: Question papers for test period with internal moderators by 11.05</i> Feedback discussion of coordinator with students on 17.05
23.04–27.04	L2.3	Normal lectures	
30.04–04.05	L2.4	Normal lectures	
07.05–11.05	L2.5	Normal lectures	
14.05–18.05	L2.6	Normal lectures	
21.05–25.05	L2.7	Normal lectures	
28.05–01.06	T2.1 (See 1.6)	Test period (incl. preparation days, no lectures)	
04.06–08.06	T2.2	Test period (no lectures)	
11.06–15.06			<i>For lecturers: Marks finalisation, Marks discussion on 15.06</i>

1.2 Schedule: Weeks starting 30.01 and 6.02 (M)

- Weeks devoted mainly to mathematical methods courses
- Introduction of students to course
- Students are obliged to attend the Faculty of Science Post-graduate workshop on 07.02
- Library introduction

Time	Monday, 30.01	Tuesday, 31.01	Wednesday, 1.02	Thursday, 2.02	Friday, 3.02
08:30–10:30	<i>Start and welcome at 09:00</i> at 10:00 is the start of JS Gericke Library information session (e-learning room JSG)	Mathematical Methods — Matrices (J. N. Kriel)	Mathematical Methods — Coordinate transformations (J. N. Kriel)	Mathematical Methods — Vector spaces (J. N. Kriel)	Mathematical Methods — Vector calculus (C. Rohwer)
10:30–11:00		Tea break	Tea break	Tea break	Tea break
11:00–13:00	Library information	Math. Methods continues	Math. Methods continues	Math. Methods continues	Math. Methods continues
13:00–14:00					
14:00–16:30	Dept of Physics Introd.	Math. Methods continues	Math. Methods continues	Math. Methods continues	Math. Methods continues

Time	Monday, 6.02	Tuesday, 7.02	Wednesday, 8.02	Thursday, 9.02	Friday, 10.02
08:30–10:30	Mathematical Methods — Extremum principles (K. K. Müller-Nedebock)	Faculty of Science Post-graduate workshop (see separate programme)	Mathematical Methods — Series expansion (K. K. Müller-Nedebock)	Mathematical Methods — Fourier analysis and delta functions (K. K. Müller-Nedebock)	Mathematical Methods — Integration in complex plane and other techniques (K. K. Müller-Nedebock)
10:30–11:00	Tea break	Tea break	Tea break	Tea break	Tea break
11:00–13:00	Math. Methods continues	PG Workshop (see sep. prog.)	Math. Methods continues	Math. Methods continues	Math. Methods continues
13:00–14:00					
14:00–16:30	Math. Methods continues	PG Workshop (see sep. prog.)	Math. Methods continues	Math. Methods continues and at 16:00 Inst. Th. Phys. Group meeting (obligatory for hon. in theor. phys.)	Math. Methods continues

1.3 Schedule: Weeks starting on 13.02–19.03 (L1)

- Public holiday: 21.03 (Wednesday)
- Dates for lecturers: 23.03 tests to internal moderators
- Dates for students: Feedback sessions on 1.03 and 22.03
- Data on modules:
 - Honours Project in experimental options (6 lab. sessions) — E. G. Rohwer
 - 711 Electromagnetism (24 hours lectures, 5 tutorials) — C. M. Rohwer
 - 712 Lagrangian and Hamiltonian Dynamics (24 hours lectures, 6 tutorials) — B. I. S. van der Ventel
 - 714 Quantum Mechanics B (24 hours lectures, 6 tutorials) — J. N. Kriel
 - 721 Statistical Physics B (22 hours lectures, 6 tutorials) — K. K. Müller-Nedebock
 - 772 Optics (22 hours lectures, 6 tutorials) — H. M. von Bergmann

Time	Monday	Tuesday	Wednesday	Thursday	Friday
08:30–10:30	Stat. Phys. B / Optics	Quantum Mech. B	Stat. Phys. B / Optics	Electrom.	Lagr. & Ham. Dyn.
10:30–11:00	Tea break	Tea break	Tea break	Tea break	Tea break
11:00–13:00	Electrom.	Laser Group meeting; Departmental Colloquium at 12:00		Lagr. & Ham. Dyn.	Quantum Mech. B
13:00–14:00				Feedback with coordinator (only certain dates, see Sec. 4)	
14:00–16:30	Quantum Mech. B Tut.	Stat. Phys. B Tut. / Optics Tut.	Electrom. Tut.	Honours Project in Physics (Laboratory slot for students following <i>experimental</i> options in Lasers & Nucl. Phys.) and Theoretical Physics Group Meeting at 16:00	Lagr. & Ham. Dyn. Tut.

1.4 Test week: starting on Tuesday 10.04 (T1)

- Public holiday: 9.04
- Dates for lecturers: marks discussion on 20.04

Date and day	Time	Evaluation
10.04, Tuesday	10:00	Quantum Mechanics B (714) Test
11.04, Wednesday	10:00	Statistical Physics B (721) Oral examinations
11.04, Wednesday	10:00	Optics (772) Test
12.04, Thursday	10:00	Electromagnetism (711) Test
13.04, Friday	10:00	Langrangian and Hamiltonian Dynamics (712) Test

1.5 Schedule: Weeks starting on 26.03, 16.04–21.05 (L2)

- Public holidays: 27.04 (Friday), 1.05 (Tuesday)
- Dates for lecturers: marks discussion on 20.04 (time to be finalised), tests with internal moderators on 11.05
- Dates for students: Feedback sessions on 26.04 and 17.05
- Data on modules:
 - Honours Project for experimental options (7 lab. sessions) — E. G. Rohwer
 - 713 Solid State Physics (24,5 hours lectures, 7 tutorials) — K. K. Müller-Nedebock
 - 714 Quantum Mechanics B (23 hours lectures, 7 tutorials) — J. N. Kriel
 - 716 Atomic Physics (24,5 hours lectures, 7 tutorials) — H. M. von Bergmann
 - 719 Quantum Mechanics C (23 hours lectures, 6 tutorials) — H. C. Eggers
 - 721 Statistical Physics B (22,5 hours lectures, 6 tutorials) — K. K. Müller-Nedebock

Time	Monday	Tuesday	Wednesday	Thursday	Friday
08:30–09:00			Quantum Mech. B		
09:00–10:30	Stat. Phys. B / Atomic Physics	Quantum Mech. B	Quantum Mech. B	Solid State Physics	Quantum Mech. C
10:30–11:00	Tea break	Tea break	Tea break	Tea break	Tea break
11:00–13:00	Solid State Physics	Laser Group meeting; Departmental Colloquium at 12:00	Quantum Mech. C		Stat. Phys. B / Atomic Physics
13:00–14:00				Feedback with coordinator (only certain dates, see Sec. 4)	
14:00–16:30	Quantum Mech. B Tut.	Stat. Phys. B Tut. / Atomic Physics Tut.	Solid State Physics Tut.	Lab. slot for Honours Project (for <i>experimental</i> options in Lasers & Nucl. Phys.) and Theoretical Physics Group Meeting at 16:00	Quantum Mech. C Tut. / Radiation Interaction Tut.

1.6 Test period: 28.05–8.06 (T2)

- Dates for lecturers: marks finalisation and discussion 15.06 (time to be finalised)

Date and day	Time	Evaluation
29.05, Tuesday	10:00	Quantum Mechanics B (714) Test
1.06, Friday	10:00	Statistical Physics B (721) Oral Examinations
1.06, Friday	10:00	Atomic Physics (716) Test
5.06, Tuesday	10:00	Quantum Mechanics C (712) Test
8.06, Friday	10:00	Solid State Physics (713) Oral Examinations

2 The reason for the mathematical methods section

Being well-versed in certain types of calculations is essential for every honours student, whether a theorist or experimentalist. The first common part of the honours course is a module on mathematical methods in which you will get to practise these fundamentally important skills and revise important concepts. In order for us to achieve the correct level at which to teach we shall be assessing your level of skill. Your answers will be anonymous!

3 Test periods

End-of-term term test are schedule during lecture-free periods.

4 Student–coordinator feedback sessions

Monthly hour-long sessions with the honours course coordinator are scheduled as follows:

Date
1.03
22.03
26.04
17.05

5 Departmental colloquia and group meetings

The participation in academic and research seminars and colloquia is fundamental to successful scientific research. We require that all honours students attend Departmental Colloquia (generally scheduled on Tuesdays at 12:00), as well as seminars in their respective specialist groups. Please consult with the group to be added to their mailing list and for more information on the scheduling of these events. Students' attendance of colloquia and group seminars will be considered should we need to decide on borderline cases between pass/fail or distinction/no distinction.

6 Faculty of Science postgraduate student orientation

The Faculty will be presenting a Post Graduate Research Orientation Workshop on Tuesday 7 February in the Con de Villiers Hall (A201), J.C. Smuts Building. Attendance of the workshop is compulsory for Honours students.