

Honours in Physics 2018 - PRELIMINARY

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A. General information

Honours students, please take note of the following points:

- **Honours projects** comprise **one quarter** of your degree! **Start early.**
- The main tests for the honours course are scheduled to occur in lecture-free weeks. Due to the many constraints upon the course, renegotiation of the test dates is not an option.
- We give a list of modules you should take in each module. We do our best to check this, but the ultimate source is the University Calendar, and we urge you to check against this in all cases.
- You should attend, where possible, all colloquia as announced, scheduled for Tuesdays at 12:00. If your schedule permits, you are encouraged to attend the regular group talks of the various research groups.
- The Faculty of Science has an obligatory information session on **6 February 2018, starting at 10:00**. This will be a lecture-free day for you. Further information shall be given to you as we receive it.

Course coordinator: Kristian Müller-Nedebock, kkmn@sun.ac.za, Room 1027, (021) 8083386 – or ask an administrator to phone me.

B. Overview for the year

	Weeks	Special dates
Lectures, Term 1 (L1)	Mon. 29 Jan. – Fri. 23 Mar. (8 weeks)	The first week has a separate schedule! Obligatory Faculty Post-Graduate 6 Feb. (no hon. Lectures)
Lectures, Term 2 (L2)	Mon. 26 Mar. – Thu. 29 Mar. (1 week)	Public Holiday 30 Mar.
University Break	Fri. 30 Mar. – Sun. 8 Apr.	Public Holiday 2 Apr.
Test week (T1)	9 Apr. – Fri. 13 Apr.	No lectures during test weeks
Lectures, Term 2 (L2) continue	Tue 16 Apr. – Fri. 25 May (6 weeks)	Public holidays 27 Apr. & 1 May; Thu. 26 April is FRIDAY schedule
Tests (T2)	Mon. 28 May – Fri. 8 Jun.	
University Break	Mid-year break	
Lectures (L3)	Mon. 23 Jul. – Fri. 7 Sep. (7 weeks)	Public holiday 9 Aug.
University Break	8 Sep. – 16 Sep.	
Test Week (T3)	Mon. 17 Sep. – Fr. 21 Sep.	
Lectures (L4)	Tue. 25 Sep. – Fri. 2 Nov. (6 weeks)	Public holiday 24 Sep; 2 Nov. honours project SUBMISSION
Tests (T4)	Mon. 5 Nov. – Fri. 16 Nov.	16 Nov. honours project ORALS

Key dates for students:

- 29 Jan., 10:00 report to Ms Ursula Isaacs (office) concerning administrative arrangements, 11:30 introduction to the Departmental Library by Ms Colleen April (Departmental Library)
- 30 Jan., formal start of honours lectures with four days of mathematical tools, term 1
- Department of Physics post-graduate session is also planned: time and venue will be announced.
- Obligatory Faculty of Science workshop for new postgraduates: 6 February 2018.
- 20 Apr., **DEADLINE** for **honours project choice** (for theorists, the literature survey part)
- 2 Nov., **DEADLINE** for **honours project submission**

Key dates for lecturers:

- 23 Mar., **DEADLINE** submission of tests for moderation (1st term), as appropriate
- 20 Apr., all students should have made choices of honours project; **DEADLINE** for project proposal to research committee
- 4 May, **DEADLINE** submission of tests for moderation (2nd term), as appropriate
- Final marks (1st semester)

- 24 Aug., **DEADLINE** submission of tests for moderation (3rd term), as appropriate
- 19 Oct., **DEADLINE** submission of tests for moderation (4th term), as appropriate
- 2 Nov., **DEADLINE** for honours project submission

B. Course overview

Module code	Name	Lecturer	Honours specialisation				Term & credits			
			Lasers	Nuclear	Health	Theory	1	2	3	4
711	Electromagnetism	Prof. F.G. Scholtz	X	X	X	X		8		
712	Lagrangian and Hamiltonian mechanics	Prof. B.I.S. van der Ventel	X	X	X	X	8			
713	Solid state physics	Dr F. Cinti	X	X	X	X		8		
714	Quantum mechanics B	Dr J.N. Kriel	X	X	X	X	8	8		
716	Atomic physics	Dr H. Uys	X		X				8	
718	Radiation interaction	Prof. R.T. Newman			X				8	
719	Quantum mechanics C	Prof. H.C. Eggers		X		X		8		
721	Statistical physics B	Prof. K.K. Müller-Nedebock		X		X	8	8		
741	Physics project		X	X	X	X		8	12	12
744	Spectrophysics	Prof. E.G. Rohwer & Dr. G. Bosman	X							8
745	Quantum optics and laser techniques	Prof. E.G. Rohwer & Dr. G. Bosman	X						8	8
747	Molecular physics	TBC - Prof. K.K. Müller-Nedebock & Dr G.W. Bosman & others	X	X (in lieu of P754)		X (in lieu of P754)			8	
748	Nuclear reactions and structures	Prof. S.M. Wyngaardt		X	X				8	
750	Physics of radiations dosimetry/radiology	@Tygerberg			X				4	4
751	Physics of nuclear medicine	@Tygerberg			X				4	4
752	Physics of radiotherapy	@Tygerberg			X				4	4
753	Radiation protection	@iThemba			X					8
754	Many-body physics	not offered in 2018								
755	Relativistic quantum mechanics and quantum field theory	Prof. H. Weigel		X		X			8	8
757	Entropy and Information	Prof. H.C. Eggers				X	8			
772	Optics	Dr G. Bosman & Dr H. Uys	X					8		8

Not offered in 2018: Physics 758 (Dynamical systems & complexity), Physics 754 (Many-body-theory)

Note: Physics 747 will replace Physics 754 this year. This is applicable to students in the nuclear physics and in the theoretical physics honours programme. Should you register for an MSc in theoretical physics in 2019, you may be required to take a course in Many-Body Theory as part of the taught credits.

C. Detailed weekly lecture schedules

WEEK 1	Monday 29 Jan.	Tuesday 30 Jan.	Wednesday 31 Jan.	Thursday 1 Feb.	Friday 2 Feb.
08:00					
09:00		Mathematical Methods – QMB (H. Kriel)	Mathematical Methods – QMB (H. Kriel)	Tutorial, Computer Lab NARGA E (K. Müller-Nedebock)	Tutorial, Computer Lab NARGA E (K. Müller-Nedebock)
10:00	Report to Ms U. Isaacs	Mathematical Methods – QMB (H. Kriel)	Mathematical Methods – QMB (H. Kriel)	Tutorial, Computer Lab NARGA E (K. Müller-Nedebock)	Tutorial, Computer Lab NARGA E (K. Müller-Nedebock)
11:00	From 11:30 - admin. Tasks, Library info. (Ms April)	LRI Meeting		Tutorial, Computer Lab NARGA E (K. Müller-Nedebock)	Tutorial, Computer Lab NARGA E (K. Müller-Nedebock)
12:00		Colloquium			
14:00	14:00- 15:00: Colloquium Prof. J. Skilling; From 15:00 – Science Librarian – to Main Library (Ms M Theron)	Tutorial, Computer Lab NARGA E (H. Kriel)	Tutorial, Computer Lab NARGA E (H. Kriel)	Tutorial, Computer Lab NARGA F (H. Kriel) <i>NB different venue!</i>	Tutorial, Computer Lab NARGA E (K. Müller-Nedebock)

Term 1 <i>From 5 Feb. onwards</i>	Monday	Tuesday	Wednesday	Thursday	Friday
08:00	P714 QMB		P714 QMB	P721 SPB	P712 Cl.M.
09:00	P714 QMB	P712 Cl.M.	P714 QMB	P721 SPB	P712 Cl.M.
10:00		P712 Cl.M.			P721 tut.
11:00	P721 SPB	LRI Meeting	P757 E&I	P757 E&I	P721 tut.
12:00	P721 SPB	Colloquium	P757 E&I	P757 E&I	
14:00		[Nucl.Ph. Prac.(*)]	P714 tut.	P757 tut.	P712 tut.

(*) Consult Prof. P. Papka

Term 2	Monday	Tuesday	Wednesday	Thursday	Friday
08:00	P714 QMB	P711 EM	P713 SSP	P714 QMB	P721 SPB &772 Op
09:00	P714 QMB	P711 EM	P713 SSP	P714 QMB	P721 SPB &772 Op
10:00		P719 QMC	P721 SPB &772 Op		
11:00	P711 EM	P719 QMC & LRI Meeting	P721 SPB &772 Op	P719 QMC	P713 SSP
12:00	P711 EM	Colloquium		P719 QMC	P713 SSP
14:00	P713 tut.	P719 tut.	P714 tut.	P721&772 tut.	P711 tut.

To be confirmed at a later stage: schedules for Terms 3 & 4.

D. Test schedules

D.1 Test week starting 9 April

	Mon. 9 Apr.	Wed. 11 Apr.	Thu. 12 Apr.	Fri. 13 Apr.
10:00	P714	P712	P757	P721
14:00				

D.2 Test weeks starting 28 May

	28 May	29 May	30 May	31 May	1 Jun.
10:00		P714			P721 & P772
14:00					
	4 Jun.	5 Jun.	6 Jun.	7 Jun.	8 Jun.
10:00	P719		P713		P711
14:00					

D.3 Test week starting 17 September: TBC

D.4 Test weeks starting 5 November: TBC