

Honours in Physics 2016

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A. General information

Dear Honours students in Physics at Stellenbosch, welcome to the course for 2016! We hope your year will be interesting and full of exciting new physics.

The following pages provide an outline for schedules during the year (with the precise time slots for the second semester being made known nearer to the time). You are always welcome to ask the course coordinator, Kristian Müller-Nedebock, if you have any questions or issues throughout the year.

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 tests is not an option.
- Honours students should attend, where possible, all colloquia as announced, scheduled for Tuesdays at 12:00, and, if the schedule permits, are encouraged to attend the regular group talks of their specialisations.
- The Faculty of Science has an obligatory information session on 3 February 2016. Please see the final page of this document.

B. Overview for the year

	Weeks	Special dates
Lectures (L1)	25 Jan. – 18 Mar. (8 weeks)	Obligatory Faculty Post-Graduate day 2 Feb. (no honours Lectures)
University break	19 Mar. – 28 Mar.	
Test Week (T1)	Tue. 29 Mar. – Fri. 1 Apr.	Public holiday 28 Mar.
Lectures (L2)	4 Apr. – 20 May (7 weeks)	Public holidays 27 Apr. & 2 May; Thu. 5 May with MONDAY schedule
Tests (T2)	23 May – 3 Jun.	
University Break	Mid-year break	
Lectures (L3)	18 Jul. – 2 Sep. (7 weeks)	18 Jul., interim project report due; Public holiday 9 Aug.
University Break	3 Sep. – 11 Sep.	
Test Week (T3)	12 Sep. – 16 Sep.	
Lectures (L4)	19 Sep. – 4 Nov. (7 weeks)	1 Nov., HONOURS PROJECT SUBMISSION
Tests (T4)	7 Nov. – 18 Nov.	

Key dates for students:

- 25 Jan., 09:00 welcome to honours course, lecture hall delta, 10:00 report to Ms Christine Ruperti concerning administrative arrangements, 11:30 introduction to the Departmental Library by Ms Colleen April
- 26 Jan., formal start of honours lectures, term 1
- Department of Physics post-graduate session is also planned for the start of the term. The time and venue will be announced.
- 18 Mar., **DEADLINE** for **honours project choice** (for theorists, the literature survey part)
- 18 Jul., **DEADLINE** interim honours project report (for theorists finalisation of literature survey)
- 1 Nov., **DEADLINE** for **honours project submission**

Key dates for lecturers:

- 10 Mar., **DEADLINE** submission of tests for moderation (1st term), as appropriate
- 18 Mar., all students should have made choices of honours project; **DEADLINE** for project proposal to research committee
- 6 May, **DEADLINE** submission of tests for moderation (2nd term), as appropriate
- Final marks (1st semester)
- 1 Sep., **DEADLINE** submission of tests for moderation (3rd term), as appropriate
- 20 Oct., **DEADLINE** submission of tests for moderation (4th term), as appropriate
- 1 Nov., **DEADLINE** for honours project submission
- Final marks (2nd semester)

B. Course overview

Module code	Name	Lecturer	Honours specialisation				Term & credits			
			Lasers	Nuclear	Health	Theory	1	2	3	4
711	Electromagnetism	Prof. H. Touchette	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						8	
718	Radiation interaction	Prof. R.T. Newman		X	X				8	
719	Quantum mechanics C	Prof. H.C. Eggers		X		X		8		
721	Statistical physics B	Dr M. De Kock & Dr L. Boonzaaier		X		X	8	8		
741	Physics project		X	X	X	X		8	12	12
744	Spectrophysics	Prof. H. Schwoerer	X							8
745	Quantum optics and laser techniques	Prof. E.G. Rohwer & Dr. G. Bosman	X						8	8
747	Molecular physics	Prof. H. Schwoerer	X			X (replaces 754 in 2016)			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
755	Relativistic quantum mechanics and quantum field theory	Prof. H. Weigel		X		X			8	8
757	Entropy and Information	Prof. H.C. Eggers				X	4	4		
772	Optics	Dr G. Bosman & Dr H. Uys	X					8		8

Not offered in 2016: 754 (Many-body physics) – all theoretical physics students pursuing an MSc in 2017 will be obliged to take this module as part of their MSc.; 758 (Dynamical systems & complexity)

C. Detailed weekly lecture schedules

Term 1	Monday	Tuesday	Wednesday	Thursday	Friday
08:30-10:30	Electromagn. (P711)	Quantum Mech. B (P714)	Lagr. & Ham. Mech. (P712)	Ent. & Inform. (P757)	Stat. Phys. B (P721)
10:30-11:00					
11:00-13:00	Stat. Phys. B (P721)	Group meetings & Colloquia	Quantum Mech. B (P714)	Lagr. & Ham. Mech. (P712)	Electromagn. (P711)
13:00-14:00					
14:00-16:30	Stat. Phys. B Tut. (P721)	Electromagn. Tut. (P711)	Lagr. & Ham. Mech. Tut. (P712)	Quantum Mech. B Tut. (P714)	Ent. & Inform. Tut. Every 2 nd week (P757)

Term 2	Monday	Tuesday	Wednesday	Thursday	Friday
08:30-10:30	Quantum Mech. B (P714)	Solid State Ph. (P713)	Quantum Mech. B (P714)	Ent. & Inform. (P757)	Stat. Phys. B (P721) & Optics (1) (P772)
10:30-11:00					
11:00-13:00	Stat. Phys. B (P721) & Optics (1) (P772)	Group meetings & Colloquia	Quantum Mech. C (P719)	Solid State Ph. (P713)	Quantum Mech. C (P719)
13:00-14:00					
14:00-16:30	Stat. Phys. B Tut. (P721) & Optics (1) Tut. (P772)	Quantum Mech. C Tut. (P719)	Solid State Ph. Tut. (P713)	Quantum Mech. B Tut. (P714)	Ent. & Inform. Tut. Every 2 nd week (P757)

Term 3: Nuclear, Health, Theory	Monday	Tuesday	Wednesday	Thursday	Friday
08:30-10:30	Nuclear React. & Int. (P748)	Nuclear React. & Int. (P748)	<i>Atomic Ph. (P716)</i> <i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	Rel. Q. Mech. (P755)
10:30-11:00					
11:00-13:00	Rel. Q. Mech. (P755) & <i>Atomic Ph. (P716)</i>	Radiation Int. (P718) tut./consultation	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	Radiation Int. (P718) & Mol. Phys. (P747)
13:00-14:00					
14:00-16:30	Mol. Phys. (P747)	Rel. Q. Mech. (P755) & <i>Atomic Ph. (P716)</i> Tut./consult.	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	Nuclear React. & Int. (P748) Tut./consult.

Term 4: Nuclear, Health, Theory	Monday	Tuesday	Wednesday	Thursday	Friday
08:30-10:30		<i>From 10:00-13:00</i>	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	Rel. Q. Mech. (P755)
10:30-11:00					
11:00-13:00	Rel. Q. Mech. (P755)	<i>Rad. Protect. (P753)</i>	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	
13:00-14:00					
14:00-16:30		Rel. Q. Mech. (P755) Tut./consult.	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	<i>Health&Rad. Modules at Tygerberg / Project Th. & Nucl.</i>	

Term 3: Lasers	Monday	Tuesday	Wednesday	Thursday	Friday
08:30-10:30	Quantum Opt. (P745)		<i>Atomic Ph. (P716)</i>	<u>Project</u>	Quantum Opt. (P745)
10:30-11:00					
11:00-13:00	Atomic Ph. (P716)	Group meeting	<u>Project</u>	<u>Project</u>	Mol. Phys. (P747)
13:00-14:00					
14:00-16:30	Mol. Phys. (P747) tut./ consult.	<i>Atomic Ph. (P716) Tut./consult.</i>	<u>Project</u>	<u>Project</u>	<i>Quantum Opt. (P745) Tut./consult.</i>

Term 4: Lasers	Monday	Tuesday	Wednesday	Thursday	Friday
08:30-10:30	Spectrophys. (P744)	Laser Techn. (P745)	<u>Project</u>	<u>Project</u>	Optics (P772)
10:30-11:00					
11:00-13:00	Optics (P772)	Group meeting	<u>Project</u>	<u>Project</u>	Laser Techn. (P745)
13:00-14:00					
14:00-16:30	Laser Techn. (P745) tut./ consult.	Optics (P772) Tut./consult.	<u>Project</u>	<u>Project</u>	Spectrophys. (P744) Tut./consult.

D. Test schedules

D.1 Test week starting 29 March

	29 Mar.	30 Mar.	31 Mar.	1 Apr.
10:00	P714	P712	P721 orals	P711
14:00			P721 orals	

D.2 Test weeks starting 23 May

	23 May	24 May	25 May	26 May	27 May
10:00		P714			P721 orals & P772
14:00					P721 orals
	30 May	31 May	1 Jun.	2 Jun.	3. Jun.
10:00	P719		P713		P757
14:00					

D.3 Test week starting 12 September: TBC

	12 Sept.	13 Sept.	14 Sept.	15 Sept.	16 Sept.
10:00	P745 & P755		P716 & P718		P747 & P748
14:00					

D.4 Test weeks starting 7 November : TBC

	7 Nov.	8 Nov.	9 Nov.	10 Nov.	11 Nov.
10:00		P744	P753	P755	P772
14:00					
	14 Nov.	15 Nov.	16 Nov.	17 Nov.	18 Nov.
10:00		P745			
14:00					

FACULTIES OF NATURAL SCIENCE AND AGRISCIENCE 2016

POSTGRADUATE STUDENT ORIENTATION

The Faculties will be presenting a Post Graduate Orientation Workshop on **Tuesday 2 February 2016** in the **Con de Villiers Hall (A201), J.C. Smuts Building**. The first part of the workshop is **compulsory** for all **new Honours students and Masters students new to SU**.

A separate work shop, focusing more on Masters and Doctoral studies, writing up research and the publication of research, will be offered later in the year for Masters and PhD students.

Topic	Time	Speaker	Department/Company
Arrival and Registration	09:45-10:00	<i>All sessions until 14:20 are compulsory for ALL students</i>	
Welcome and introduction	10:00-10:05	Prof P Swart	Vice-dean (Research):Science
Students rights and responsibilities	10:05-10:15	Mrs Mariëtta van den Worm	Faculty Manager: Science
PG Student support	10:15-10:50	Ms Ronel Steyn	Postgraduate and International Office
Ethics , Etiquette and Plagiarism in Research	10:55-11:25	Mr Winston Beukes	Research Office
Data Safety and Security and Documentation Backup	11:30-11:45	Ms Ilse De Kock	NARGA
Information Managment	11:45 – 12:15	Ms Marie Theron and Mr Y Ras	SU Library Services
Presenting research results	12:20- 13:00	Prof Karen Jacobs	Microbiology
Lunch	13:00-14:00	A luncheon package will be provided.	
Safety at the workplace ; Introduction to Occupational Health and Safety Act Fire and evacuation procedures	14:00 – 14:20	Mrs Mariëtta van den Worm	Faculty Manager: Science
Safety outside the laboratory	14:25 - 15:00	Dr James Pryke/ Alison Leslie	Conservation Ecology and Entomology
Special modules for all students in Biological or Chemical disciplines working in wet labs			
Introduction on How to Handle Chemical Laboratory Waste (all types) and Hazardous spills	15:05-15:45	Ms Peta Steyn	Chemistry and Polymer Sciences
Introduction on How to Handle Biological Laboratory Waste	15:50- 16:20	Mr Ashwin Isaacs	Physiological Sciences