

Welcome to the second year!

2nd year Tutor in Physics

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Welcome

- Survived the first year? **Well done.**
- The learning process is not over yet.
- More challenges lie ahead.
- 2nd year is more difficult than the 1st one. You will realize this very soon.
- More information and more difficult material to learn.

Recipes for success

- Adopt good working practice:
 - Attend **all** lectures, tutorials and problem classes.
 - Make notes as detailed as possible.
 - Complete **all** coursework in time. Penalties for late homework submissions: 5% per day up to 5 working days. Timetable is given (MOLE). If in doubt, check with the module leader.
 - Revise material shortly after the lecture. Do not delay the first revision until the exam period.
- **Do not be late for your class.** If a class starts at 9:00, then you should be in the class room by 9:00.
- **Do not talk to each other during lectures.** When talking, you distract the lecturer and your classmates.
- **Turn off your mobile phones!**

Contacts

- 2nd year tutor (Physics)

Dr. Vitaly Kudryavtsev, office E45, phone: 2224531,
v.kudryavtsev@sheffield.ac.uk

- Other contacts:

<http://www.shef.ac.uk/physics/teaching/second-year/contacts.html>

- Teaching support staff:

hicksstudentsupport@sheffield.ac.uk

2nd year guide

- Link from 2nd year teaching web-page:
[http://www.shef.ac.uk/physics/teaching/
second-year](http://www.shef.ac.uk/physics/teaching/second-year)
- Astrophysics introductory talk:
Wednesday, 26/09, 12:00, D17.

Modules, lectures

- Autumn semester:
 - PHY250 - 25 credits, core for everybody.
 - PHY221 – Classical physics, core for most programmes.
 - PHY230 – lab.
 - PHY235 – Programming, core for MPhys Physics and all theorists.
 - Optional – PHY245, astrophysics and medical physics modules (check pre-requisites).
- Spring semester:
 - PHY251 - 25 credits, core for everybody.
 - PHY227 – Optics, core for most programmes.
 - PHY231 - lab.
 - Optional: PHY236 (for theorists), PHY248, astrophysics.
- Full list of modules for each programme is available from

<https://www.sheffield.ac.uk/programmeregulationsfinder/faculty?code=FCP&year=2018>

Exam papers: PHY250/251

- PHY250:
 - paper A includes mathematics and solids,
 - paper B includes electromagnetism and quantum mechanics.
- PHY251:
 - paper A includes topics on thermodynamics, statistical physics and solids,
 - paper B includes quantum mechanics, atomic and nuclear physics.
- All questions in PHY250/221/251/227 exam papers are compulsory and no options will be provided.

Tutorials

- Core taught modules (PHY250, PHY251, PHY221, PHY227) are supported by tutorials.
- Each tutor has two groups of 6-8 students. Tutorials are in the timetable and you should know the time and venue for your tutorials. If in doubt, please, contact teaching support staff in F10.
- One tutorial per week starting on week 2. Tutorials are **compulsory but not assessed**.
- Format is flexible and depends largely on you: your questions, participation and activity. Mainly discussion of problems with your active participation.

Problem classes

- One class per week starting on week 2.
- Problem classes (PCs) will cover all taught core modules (PHY250, PHY221 – autumn; PHY251, PHY227 – spring).
- Two groups on Monday at 11:00 and Thursday at 12:00 in Hicks D17.
- PCs are in the timetable and you should know which group you are in and time for your PC. If in doubt, or there is a clash with another class that you need to attend, please, contact teaching support staff in F10.
- This is another way of practicing problems.
- Help is provided by lecturers and PhD students.
- Problem classes are not assessed but attendance is compulsory and will be monitored.

Timetable

		Mon 9am LT07	Tue 2pm LT01	Tue 4pm LT07	Thus 9am ADB-LT01	Thurs 11am DIA LT07	Fri 10am LT07	Problem class topic	HW – Monday 4.00 pm submission week 12 (Monday and Friday)	Suggested tutorial topics
Week 1	w/c 24 th Sep	Fourier DM	Fourier DM	EM MG	Fourier DM	EM MG	Fourier DM			
Week 2	w/c 1 st Oct	Fourier DM	Fourier DM	EM MG	Fourier DM	EM MG	EM MG	Fourier		Fourier
Week 3	w/c 8 th Oct	Fourier DM	EM MG	EM MG	Diff eqns AB	EM MG	EM MG	EM	Fourier	EM
Week 4	w/c 15 th Oct	EM MG	Diff eqns AB	EM MG	Diff eqns AB	EM MG	Diff eqns AB	PHY221	EM	PHY221
Week 5	w/c 22 nd Oct	EM MG	EM MG	Diff eqns VK	Diff eqns VK	Diff eqns VK	Diff eqns VK	EM	PHY221	EM
Week 6	w/c 29 th Oct	Diff eqns VK	Solids RJ	Diff eqns VK	Diff eqns VK	Solids RJ	Diff eqns VK	Diff eqns (AB & VK)	EM	Diff eqns (AB & VK)
Week 7	w/c 5 th Nov	Reading week								
Week 8	w/c 12 th Nov	QM MM	Solids RJ	QM MM	Solids RJ	QM MM	Solids RJ	PHY221	Diff eqns	PHY221
Week 9	w/c 19 th Nov	QM MM	Solids RJ	Solids RJ	Solids RJ	QM MM	Solids RJ	Solids	PHY221	Solids
Week 10	w/c 26 th Nov	QM MM	SR TV	QM MM	SR TV	QM MM	QM MM	PHY221	Solids	PHY221
Week 11	w/c 3rd Dec	QM MM	SR TV	QM MM	SR TV	QM MM	QM MM	QM	QM	QM
Week 12	w/c 10 th Dec	Revision	Revision	Revision	Revision	Revision	Revision	Relativity	QM (Mon) Relativity (Fri)	Relativity

Hand-in dates

- Homeworks should be handed in every Monday starting with week 3 (deadline 4 p.m.). Exceptions: no deadline on week 7 (reading week), 2 deadlines on week 12: Monday and Friday.
- Late submissions are subject to penalties: **5%** of the mark per day for a maximum of 5 working days; after that, 0% is returned.
- If your total mark is **60%** but the work was submitted **5 days** after the deadline, then
 $1 - 5 \times 0.05 = 0.75$; $60\% \times 0.75 = 45\%$.

Assessment

- Most modules:
 - Homeworks - 20%.
 - Exam - 80%.
- PHY236 (Computational physics for theorists): coursework including assessments - 100% (no formal exam).
- PHY235 (Programming in python): lab and assessments – 65%, formal exam – 35%.
- PHY230, PHY231 (Experimental Physics I and II): laboratory coursework – 100%, no formal exam.

Mark details

- Pass mark is 40% per module.
- **To pass a module (PHY250/251/221/227) a student will need to pass the combination of all formal examinations (2 exams for PHY250/251), AND the combination of the examinations and the homeworks.**
- Example 1:
40% at the exam(s) and no homework will mean only 32% for the final mark - fail!
- Example 2:
30% at the exam(s) plus 50% for coursework will sum up to 24% + 10% = 34% for the final mark - fail!
- Example 3:
35% at the exam(s) plus 80% for coursework will sum up to 28% + 16% = 42% for the final mark but – fail!

Resits

- Resit marks **for a module** are capped at **40%**.
- No resits for most of the coursework. Check information on the web-page:
<http://www.shef.ac.uk/physics/teaching/second-year>
link to 'Second year information'.
- **Only one additional attempt to resit failed modules. If you fail modules on the resits in August you will NOT be able to retake the failed modules next year.**

Useful information

- General information about teaching, programmes, modules, timetable of lectures, cover sheets for homeworks etc.:

<http://www.shef.ac.uk/physics/teaching/>

- Information about 2nd Year, contacts etc.:

<http://www.shef.ac.uk/physics/teaching/second-year>

- Information about a particular module: MOLE or link from the teaching web-page to 'List of modules':

<http://www.shef.ac.uk/physics/teaching/modules.html>

Difficult courses?

- Last year top marks for the core taught modules:

Code	Subject	Top mark
PHY250	From Thermodynamics to Quantum Mechanics	90%
PHY251	From Electromagnetism to Atomic and Nuclear Physics	95%
PHY221	Classical Physics	90%
PHY227	Optics	94%

There is nothing wrong with modules or exams if well-motivated students could get first-class marks.

Our expectations

- We expect from you:
 - Good knowledge of the core material from the 1st year: both Physics and Mathematics. Keep your notes and lecture notes from lecturers. Look at them when necessary, check also the textbooks.
 - Hard work during the term (not only during the exam period); 40 hours per week is expected (depends largely on a particular student).
- All this is in your own interests.
- Download all material from MOLE or modules web-pages; do not expect the files to be there until you graduate.

Importance of Year 2 marks

- Year 2 marks contribute $1/3$ to the final BSc mark; $2/3$ is from Year 3 marks.
- Year 2 marks contribute $1/5$ to the final MPhys mark; $2/5$ are from Year 3 and Year 4.
- If you are registered for MPhys, you need to get at least 59.5% in your 2nd year to continue with MPhys.

Plagiarism and collusion

- Both are forms of cheating; as a result **0 mark** will be returned for the assignment plus inclusion in the **'Register of plagiarists'**.
- Plagiarism is growing. It is very easy now to fall into this when using different web-sites.
- Even if plagiarised work is not found immediately, it will remain with us and can be detected later - with a possible **retrospective loss of the degree**.

Plagiarism and collusion

- There was a case of collusion several years ago in the 2nd year lab. Two students who have copied lab reports from 3rd year students received 0 mark for the whole module. The case was put on their departmental records. One of them has plagiarised another coursework a year later and his case was reported to the Faculty. The Faculty panel has expelled him from the University.
- There are several cases of plagiarism in essays and other coursework every year. Students are penalised. Some of them received 0 mark for the assignment.
- Those who provide their own work for collusion will also be penalised.

Plagiarism and collusion

- All essays, literature surveys etc **must** be submitted in electronic form via MOLE to a plagiarism checking software **TURNITIN** - check with your lecturer for details.
- Collusion: it is easy to fall into this by doing lab work or projects in pairs, or working together on homeworks.
- You can discuss the work with your friends but do final answers **alone**.
- It is easy for a marker to pick up similarities, especially if both answers are wrong in the same way.

Problems?

- If you feel sick and cannot attend a lecture, lab or tutorial, in particular if you miss a deadline for a coursework, **phone or e-mail Teaching Support Unit** / lecturer / tutor and get a medical note.
- If you experience long-term problems (medical problems, personal or family problems) that could affect your performance then **talk to Senior Tutor** (Dr Susan Cartwright) urgently. Medical problems require **medical notes** (documentation). It is very difficult to deal with such problems retrospectively.
- Do not forget about **personal tutors** - they may be able to help.

Personal tutors

- You have personal tutors.
- They will contact you shortly to arrange a meeting.
- The main topic for discussion at this meeting: your performance in Year 1 (exams etc).
- You are expected to have at least 2 sessions per year with your personal tutor.
- Your contact with the tutor is not limited to formal meetings. You can approach your tutor at any time should you wish so.

PHY230: Physics lab

Physics lab head: Dr Matt Mears.

Lab sessions will be in E32 (physics laboratory).

Future career

- Start to think about future career: research, business, building work?
- Consult with Career Services at the University.
- Write CV, think about improving it.
- Additional activities: summer placement (or any job), even part-time and/or unpaid.
- More details:

<https://www.sheffield.ac.uk/physics/teaching/careers>

Also a special web-page on MOLE.

Study rooms

- IT facilities on G-floor.
- I19 in Hicks – a study room for undergraduates (shared with Maths). It has plenty of space, tables, chairs and a whiteboard, and is intended for quiet study. You can go there to make productive use of time in between lectures and tutorials, if you do not want to waste time going to the Information Commons, Library, Student Union or other places.
- D13 – the Barry Jackson (common) Room, at the back of the ground floor of the building, just before Lecture theatres 3 and 4. This is also a room you can go to sit down, but probably with more noise, more like a social space.

Welcome!

- Welcome to the 2nd year!
- We wish full success and the highest possible marks to all of you!
- Remember: we are here to teach you and help you.