# Physical Sciences – what you need to know

FOR


Dummies

Geniuses

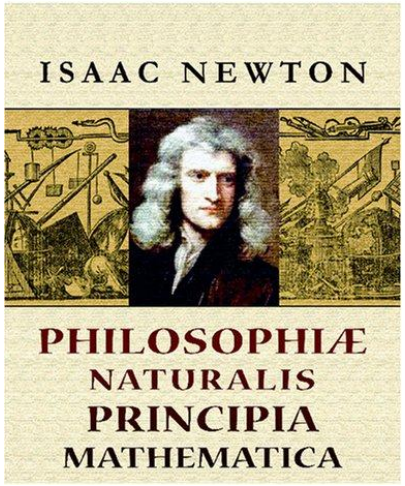
**And everybody in between**

# Are you interested?

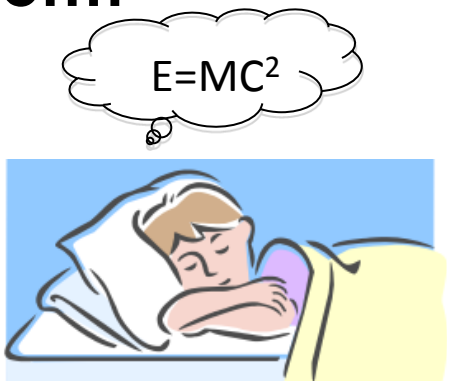
**Want to be named…**

Isaac? Marie? Stephen?

**Did you finish reading…**




**Did you dream of…**




Then the physical sciences are probably for you!

**But, are you SURE** you long to memorise this: $i\hbar\frac{\partial}{\partial t}\Psi(\mathbf{r},\,t) = \hat{H}\Psi(\mathbf{r},\,t)$

**Are you SURE** you want to deal with that on a regular basis :

-Frustration
-Nervousness
-Emotional Breakdowns

## NO need to panic!

Applying the information given here will allow you to

start your degree like this  and end like that 

The ideas and tips presented are based on my own experiences and those of fellow science students. (Despite my advice, however, it is not entirely impossible that you do encounter one or more minor difficulties during your course.)

This presentation will address the following areas:

Coming to university

Finding your routine

Progressing through the years

Graduating and beyond

# 1. Coming to university

-Albert E.  just received his acceptance letter from Harvoxcam University and is exuberant. However, he also feels ambivalent to some degree. It is, after all, a BIG step for him.

-As a matter of fact, I shared those feelings before coming to university. As I was preparing for my course, I quickly realised that I would be more motivated and would enhance my university experience by setting myself some specific objectives. These included:

# Goals while studying:

- -Successfully completing the degree
- -Meeting new people and building connections
- -Learning 'outside the classroom'
- -Preparing for life beyond university
- -And, the last goal (admittedly very insignificant): Enjoying university life

*I have found setting these objectives very helpful and believe they could be of use to any student, such as Albert E. The goals will now be looked at in some more detail:*

# Successfully completing the degree

This goal may seem obvious, but it is easy to lose sight of. Being awarded his degree is, ultimately, the key objective Albert needs to work towards. However, feeling overwhelmed by the daily work is common during a challenging physical science course. In order to ***stay motivated***, this aim must be kept in mind.

# Meeting new people and building connections

No matter which secondary school Albert may have attended, Harvoxcam is likely to be bigger and more diverse (I was positively surprised by the personal and cultural diversity I encountered at university). Forging ***lasting friendly and professional relationships*** are exciting prospects.

# Learning outside the classroom

A university is, evidently, an institution for academics. Next to studying his subject, Albert will be able to talk to renowned lecturers, may consider attending some lectures outside of his course, and can engage in discussions with other students in order to ***broaden*** his knowledge.

# Preparing for life beyond university

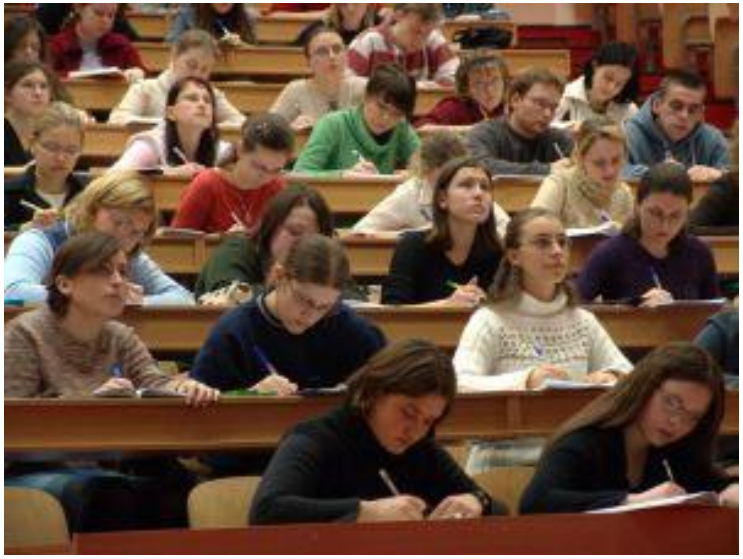
Experiencing university life for several years would be intrinsically valuable even without a final degree. The ***skills*** Albert will pick up (strong work ethic, teamwork, leadership, and communication skills) will be highly beneficial throughout his career.

# Enjoying university life

Believe it or not, despite all the lectures, practicals, countless hours of study and exams, Albert should be enjoying the university course. Thus, if the work really does threaten to overwhelm him, Albert should not feel guilty ***taking some time off.*** (But if Albert is in the middle of an exam, he might consider postponing his leisure time for just a few hours.)

# 2. Finding your routine

Albert E. has already spent several weeks at the University of Harvoxcam – he has joined multiple societies and become friends with Niels B. and Richard F. However, he is wondering how he should arrange his work and leisure time. I felt similarly; in order to make the most of my time, I established **the following types of routine:**



## Lectures

Arguably the defining feature of tertiary education. It is easy to see lectures as a burden (particularly on Saturday mornings). However, Albert is well-advised to experiment with ***different techniques of attending lectures*** – for instance, whether to take notes during or after each lecture.

# Seminars / Supervisions

At most universities, students will be able to learn and ask questions in small groups with a supervisor. Again, Albert needs to find a way to ***use that time wisely*** (supervisors tend to be busy academics) – for example, I have found preparing questions beforehand useful.

# Practical work

Albert, like many other students (myself included), habitually forgets that science is based on ***empiricism.*** More likely than not, experiments will thus be part of Albert's schedule. Whether he likes them or despises them, he needs to apply himself in order to get the most out of his practical work (even if he is positive he will soon have completed his Theory of Everything).

# Extracurricular activities

Balancing studies with other activities (such as sports, drama, or volunteer work) will be another part of Albert's ***time management***. Even if he wanted to, he could not learn efficiently by studying 24 hours each day – additional activities are enjoyable and good for his CV.

# General routine

At my interview, I was told parents frequently complain that their children do not get enough sleep at university. The interviewer said the staff is proud of that fact as it implies that the students are taking advantage of the many opportunities available to them. Similarly, I have found the best recipe for being successful at university to be ***'working hard and playing hard'.***

# 3. Progressing through the years

Time will fly for Albert at university (even if he does not apply Relativity to warp space-time.) As mentioned, it is important for him to keep his ***goals in mind***. Setbacks and challenging times are absolutely normal. If he does not experience them, he may either be closing in on his first Nobel Prize or he may have lost touch with reality some time ago.

# Theoretical versus practical science

Most university courses will gradually specialise over the years. This also means that Albert has to ***decide*** whether to focus on theoretical or practical science.

**Hours in front of a notepad?**

**Or hours in a laboratory?**

Being ***flexible*** to change one's mind (during my course my interests actually shifted) is important here.

# Internships and future planning

Even if Albert is still just in his first year, looking at internships and beginning to ***brainstorm*** his future career is useful. Most universities offer summer work opportunities – Albert could gain valuable ***experience*** and skills in such a program.

# 4. Graduation and Beyond

Albert has been doing well so far. Graduation is still almost a year away so surely he does not yet need to worry too much about the ***following years?***

Albert should be careful. It is, in fact, never too early to begin planning. One does not want to be sending off job applications the night before the final exams. Some of the many ***resources*** available are:

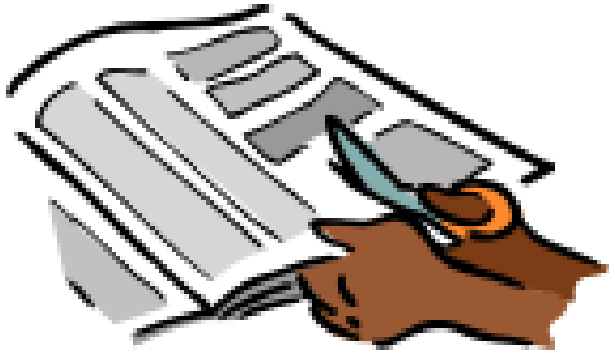
-Advice from supervisors, directors of studies, fellow students.

-Advice from family and friends.

-Career books and the internet.

-Advice at internship programs.

One of the benefits of studying a physical science is that Albert will have many career options after completing his course. Similar to his goal-setting before beginning his degree, he needs to think about his ***options and aims:***



-Getting higher degrees in the physical sciences
-Continuing to study, but pursuing a different subject
-Applying for jobs
-Taking some time off

Albert needs to carefully ***evaluate*** how motivated he will be to pursue each option. In addition, the cost of the different opportunities may vary widely.

# Studying at university can be summarised as:

Still, never forget that the time spent at university is one of the ***best*** periods of life. (Source: Parents).

***Remember:***

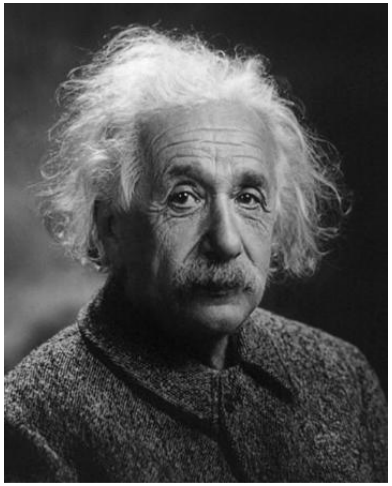
Success

can also be attained in

***UNCONVENTIONAL ways***

(as the real Albert E.

demonstrated).



# GOOD LUCK!